Diabetes and Maternity Department

Information about Pregnancy for Women with Diabetes

This leaflet is for women who have been diagnosed with diabetes (Type 1 or Type 2 Diabetes) before becoming pregnant. This does not cover gestational diabetes.

To give yourself and your baby the best start you can, you need regular reviews of your diabetes and general health by the diabetes team and the obstetric (maternity) team throughout pregnancy. We encourage you to share this leaflet with your friends and family so that they can support you as well. We have listed several frequently asked questions below.

Will I have a healthy baby?

The majority of women with diabetes have healthy babies. However, women with diabetes have a higher chance of developing problems affecting themselves and their babies. This can be reduced if conception occurs at a time when diabetes is tightly managed before pregnancy and your general health is good. We encourage all women to discuss pregnancy planning with their diabetes team before conceiving.

However, do not panic if you are already pregnant! Now is the time to get your body on track. Your diabetes and maternity team will be working with you towards the best outcome for you and your baby. Women often say that managing diabetes when they are pregnant is like having a full-time job. As your baby grows and develops, it takes a lot of effort to keep blood sugars in a safe range. You will have many appointments, tests and scans. It is a lot of work, but it is worth it. It will greatly reduce the risk of complications and it will mean you are more likely to have a successful pregnancy and a healthy baby.

What risks should I be aware of?

You and your baby are at higher risk of:

- miscarriage
- your baby has an increased chance of abnormalities occurring, such as heart problems, which may affect your baby during pregnancy or cause ongoing health problems after birth
- extra fluid around the baby (polyhydramnios), possibly leading to preterm labour and delivery
- a large baby – this can increase your chance of being offered an induced birth or an elective caesarean section to prevent complications occurring at the time of delivery
- a difficult delivery (shoulder dystocia – baby's shoulder being stuck on delivery) is 2-4 times higher than in women without diabetes

- stillbirth (unexpected death of baby during pregnancy) is 4-5 times higher than in women without diabetes
- neonatal death (death of newborn in the first few days to 28 days of birth) is 3 times higher than women without diabetes
- perineal trauma and excessive blood loss during birth.

You may also be at risk of other complications such as:

- premature labour (labour before the 37th week of pregnancy)
- having a small baby or 'growth-restricted' baby
- pre-eclampsia (raised blood pressure and protein in urine)
- having more low blood sugars and reduced warning of low blood sugars
- diabetic ketoacidosis (uncontrolled high blood sugars)
- worsening of diabetes complications, such as diabetic retinopathy (eyes) and nephropathy (kidneys).

Your baby may also be at risk of problems in the early days such as:

- low blood sugar
- temporary health problems (such as needing support for breathing or jaundice) that may require admission into the special care baby unit (SCBU).

However, these risks can be greatly reduced, and a very large majority of women have healthy pregnancies and healthy babies.

How do I reduce the risks?

There are many things you can do to reduce these risks, but most importantly keeping your blood sugar levels in a safe range before pregnancy and continuing this throughout pregnancy. This includes:

Diet
Aim to have a healthy, balanced diet during pregnancy. We recommend you speak to a dietitian who specialises in diabetes and can advise about important aspects of diet, including energy content, protein, iron, calcium, folic acid and vitamin D. Carbohydrates are important as these types of food can push the sugar levels up, but they are also important in providing the energy required to have a healthy pregnancy. If you are overweight, the dietitian can also advise about how to manage your weight during pregnancy.

Exercise
Women with diabetes benefit from regular exercise in pregnancy. Physical activity is a way to relax as well as an essential tool for diabetes management. Pregnancy is not the time to begin a vigorous new exercise routine, but if you are already active, keep going.
Do discuss with your midwife any specific activities which may need to be modified for pregnancy. If you are not usually active, start gradually and aim to include walking daily.

Stop smoking, stop drinking alcohol and stop using recreational drugs
Smoking increases the risk of damage to blood vessels in the heart, brain, feet and kidneys. Smoking, alcohol and recreational drugs can cause miscarriages and harm the development of the baby. Please speak to your individual midwife or midwifery team for support with this.

Regular contact with diabetes and maternity teams
We encourage you to have regular contacts with your diabetes team throughout pregnancy. This is often weekly or fortnightly. Your maternity team will see you at particular times during pregnancy and you will be offered extra scans in the third trimester to monitor growth.

Your midwife will talk to you about monitoring your baby's movements. You will be asked to learn your baby's pattern of movement and always seek professional advice from your midwife or maternity unit at any time if that pattern changes, no matter how many times this happens. Never go to sleep ignoring a reduction or change in your baby's movements. Do not rely on any home kits you may have for listening to your baby's heartbeat.

What about medications?

Folic Acid
Babies of women with diabetes are at higher risk of spina bifida (brain and spinal defects). We recommend all women with diabetes to take the higher dose folic acid 5mg tablet which needs to be prescribed by your GP. This can be started ideally before conceiving and until you are 12 weeks pregnant as confirmed on scan.

Vitamin D
Vitamin D is important for bone health for both mum and baby. 10micrograms (mcg) of vitamin D once daily is recommended throughout pregnancy and breastfeeding. Pregnancy multivitamins will usually contain this amount, although you can also buy plain vitamin D tablets or capsules.

Aspirin
We recommend taking aspirin 150mg daily, preferably in the evening, from 12 weeks of pregnancy until birth. This helps to reduce the risk of pre-eclampsia.

Diabetes tablets
For women with type 2 diabetes, you may require metformin tablets to manage your blood sugar. If you are already on these, continue them through pregnancy. All other tablets for type 2 diabetes should be discontinued, ideally before conceiving.

You may require the addition of insulin to keep your sugar levels safe. Please discuss your diabetes medication with your diabetes team.

Insulin
For women with type 2 diabetes, you may require the addition of a long-acting background insulin injection, often at night, or first thing in the morning. You may also require the addition of short-acting insulin to be taken with meals.

For women with type 1 diabetes, you may require finer adjustments to your insulin doses to match your carbohydrate intake or correct a higher sugar level. Your diabetes team may also suggest a change of insulin type or method of delivery of insulin.

Other tablets
Please speak to your GP about all the medications you are taking as they must be reviewed before pregnancy, or as soon as possible after you find out you are pregnant. Cholesterol tablets must be stopped. Blood pressure tablets may need to be changed to ones that are safe in pregnancy and doses adjusted.

What about my eyes or kidneys?

We will inform the diabetes eye screening programme of your pregnancy. You will be offered retinal photographs 2-3 times during pregnancy (during early and later stage of pregnancy) and after birth. Your urine will be dipped regularly for protein leakage and can be sent to the lab as well to monitor your kidneys.

What sugar levels are considered safe and how often do I test?

In pregnancy, our targets are as follows:

Fasting and pre-meals **below 5.3mmol/l AND**

1 hour after meals **below 7.8mmol/l**

If you have missed the 1-hour mark, we recommend a target of below 6.4mmol/l for 2 hours after meals. We recommend avoiding blood sugars below 4mmol/l which would be a 'hypo'. Please discuss with your diabetes team the recommended treatment options for a 'hypo'. Please ensure you test before driving and aim for above 5mmol/l before you drive. We recommend you test at least 7 times a day pre-meals, post-meals and pre-bed.

In the first few months of pregnancy, some women, particularly those with type 1 diabetes, are more sensitive to insulin and have more 'hypos'. Doses need to be reduced to manage these. Symptoms of 'hypos' can also be reduced. Women with type 1 diabetes may require a glucagon injection kit. Early pregnancy sickness can make it more challenging to manage diabetes. Speak to your team about this.

In the second and third trimester, you are likely to need a gradual increase in insulin doses and some women need 2-3 times more insulin by the end of pregnancy. It is useful to write down your usual doses prior to pregnancy, as it is likely to be very different at the end of pregnancy. We would generally expect you to be back on your usual or lowered insulin doses (if you were on insulin) after baby is born.

What about extra scans?

All pregnant women are offered a dating scan around 11-14 weeks and a detailed (anomaly) scan at 20 weeks. Women with diabetes are offered serial growth scans from 28 weeks until about 36 weeks or birth.

What about delivery?

Women with diabetes are advised to have their baby before the 39th week of pregnancy. The timing of delivery depends on size and maturity of baby, volume of amniotic fluid, development and maturity of the placenta, and any problems with blood pressure or glucose management.

If there are no concerns or complications, you will be offered an elective birth by induction of labour or caesarean section between 37^{+0} weeks and 38^{+6} weeks.

If there are concerns or complications, you may sometimes be offered an earlier birth before 37 weeks. You may be offered two steroid injections if delivery is possibly before 36 weeks or if you are going to have a caesarean section before 38 weeks. You are likely to need hospital admission for this, to be on a drip with insulin to manage the sugar levels, as steroids can push these up.

If you are obese (BMI 40 or more) or have other concerning medical problems, you may be offered an appointment with an anaesthetist before delivery.

What about my blood sugars during delivery?

It is important to manage your sugars tightly during delivery to reduce the risk of baby's blood sugars falling low after birth. When you are in active labour, your blood sugars are monitored hourly and you may require an insulin drip during this time period. If your blood sugars go above 7.8mmol/l twice, this drip will be started. Your diabetes team will make an individual plan for your diabetes management just before, during and after the birth. Be prepared to change your doses and make adjustments depending on the levels.

What is hand-expressing?

We encourage women to hand-express breast milk from 36 weeks onwards in order to promote early breast-milk supply. You will be shown how to do this closer to the delivery date. For those remaining on insulin after birth, it is important to be aware that blood sugars can fall during or after breastfeeding, much like exercise. You may need a snack before or during feeding.

What happens to baby after birth?

Sometimes babies born to women with diabetes need extra care in the Special Care Baby Unit (SCBU). We do not routinely admit baby into SCBU, but only do this if baby requires extra monitoring or treatment. We encourage early feeding of baby after birth and every 2-3 hours after that.

Baby's blood sugar will be checked 2-4 hours after birth and, if low on 2 consecutive measurements, or if there are any concerns, then the paediatric doctors (doctors specialising in babies) may be asked to review. Please bear in mind the low blood sugar cut-off level for babies is much lower than adults (less than 2.5mmol/l or lower compared to 4mmol/l in adults on insulin).

Will my baby have diabetes?

No. Your baby will not be born with diabetes. If you have type 1 diabetes, the chance of your child developing type 1 diabetes in the future is 5% (or 5 children out of a hundred will have type 1 diabetes). A child has a higher chance of developing type 1 diabetes if his or her father has type 1 diabetes (7% or 7 children out of a hundred). If you have type 2 diabetes, your child may be at higher risk of developing type 2 diabetes in the future. However, keeping to a healthy weight, diet and lifestyle will reduce this risk.

What about the future?

After all your hard work through pregnancy, it is still important to maintain good levels of blood sugars after birth in order to prevent future problems. This may be more challenging when caring for a new baby. Speak to your family to see how they can support you. Keep monitoring your blood sugars, especially when breast-feeding. Your diabetes team would be happy to advise you if you were unsure what to do with your insulin or medication or blood sugars.

Please keep your eye appointments after birth. A post-natal diabetes review can be arranged with the pregnancy diabetes team after birth and then you should have further routine follow-ups with your usual health care team that supports you with your diabetes.

Please discuss contraception with your GP or maternity team. We recommend using contraception regardless of whether you plan to have more children or not.

When you are considering another pregnancy, make an appointment with your GP 6-12 months before attempting to conceive. Your GP can refer you to the diabetes team to discuss planning the next pregnancy. Do not stop your contraception until you have the go-ahead from your diabetes team. We would be aiming to get your HbA1c (long-term diabetes control marker) to below 53mmol/mol or as close to 48mmol/mol as possible. In addition, we would recommend taking folic acid 5mg (needs to be prescribed by GP) 1-3 months in advance and making sure all your medications are safe in pregnancy.

Ensure you are up-to-date with your annual review checks at your GP surgery (eg feet, kidneys, urine test, blood pressure, eyes) and that you try to keep a healthy diet, lifestyle and weight.

Useful Websites:

Dorset Maternity Matters website
https://maternitymattersdorset.nhs.uk/

Diabetes UK – information for pregnancy and diabetes
https://www.diabetes.org.uk/guide-to-diabetes/life-with-diabetes/pregnancy/during-pregnancy

JDRF UK – pregnancy toolkit for type 1 diabetes
https://jdrf.org.uk/information-support/newly-diagnosed/information-packs-and-leaflets/pregnancy-toolkit-e-download/

NICE guideline [NG3 - 2015]
https://www.nice.org.uk/guidance/ng3/ifp/chapter/Women-who-already-have-diabetes

Contact Numbers:

We hope that you have found this information useful. If you have any questions or are worried about anything, please speak to the following Dorset County Hospital Staff:

Consultants	
Dr Suguna Balasundaram Consultant Obstetrician and Gynaecologist	01305 255478
Dr Mo-Lee Wong Consultant Diabetes and Endocrinology	01305 255738
Diabetes Specialist Nurses Lisa Clark Vicky Greenwood	01305 255342
Diabetes Dietitian Sandra Hood	01305 255211
Diabetes Specialist Midwife Jacqueline Maslin	01305 254252 or 01305 762683

Labour Line: 0300 369 0388 (if you think you are in labour or have urgent concerns)

About this leaflet:

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Written:	June 2020 *Amended with kind permission from Guys' and St Thomas' NHS Foundation Trust, from Patient Information Leaflet: "Diabetes and Pregnancy. Information for women with type 1 and type 2 diabetes (2019)"*
Approved:	September 2020
Review date:	September 2023
Edition:	1

If you have feedback regarding the accuracy of the information contained in this leaflet, or if you would like a list of references used to develop this leaflet, please email pals@dchft.nhs.uk

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