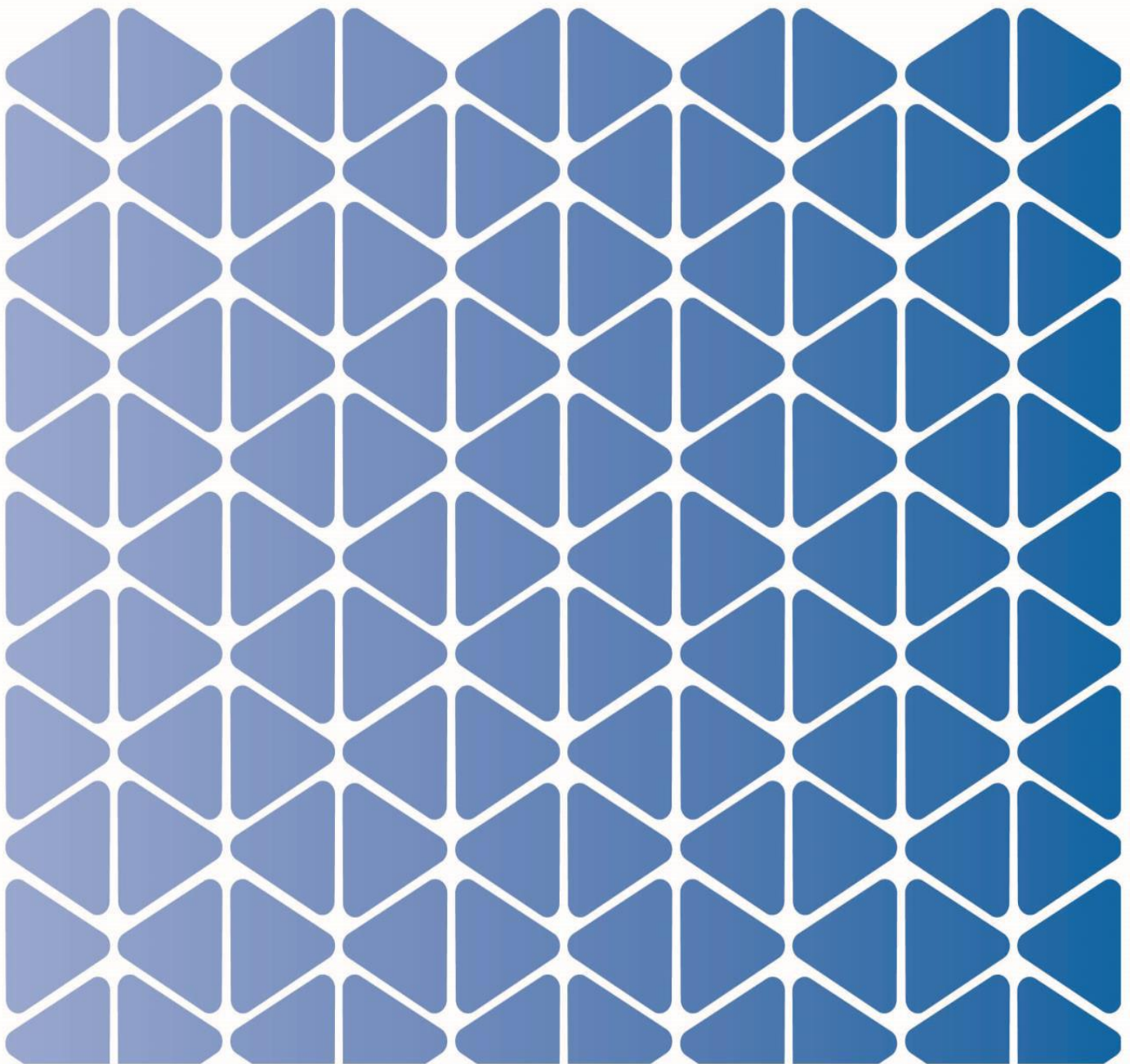


PATIENT INFORMATION**MANAGING YOUR TYPE 1 OR TYPE
2 DIABETES DURING PREGNANCY**

INTRODUCTION

This leaflet aims to give you information and advice about managing your Type 1 or Type 2 Diabetes during pregnancy.

WHY IS THIS IMPORTANT?

If you become pregnant and you have diabetes, you should go on to have a healthy baby, but there are some complications you should be aware of.

Pregnancy hormones will affect your blood sugars, and you may need more or additional medications during this time to help keep your blood sugar within target range. The Diabetes team are experienced with looking after pregnant people with diabetes and will be able to advise you about your specific targets during pregnancy. We are here to support you, right from the beginning of pregnancy, so please let us know as soon as you have a positive pregnancy test, using the contact details at the bottom of this leaflet.

There are risks for both you and your baby.

The risks to your baby are:

- Miscarriage
- Increased chance of developing birth defects/congenital abnormalities
- Your baby being smaller than expected (small for gestational age -SGA) or not growing at the expected rate (fetal growth restriction- FGR)
- Being bigger than average (which may lead to difficulties during the birth and increases the likelihood of needing induced labour or caesarean section)
- Shoulder dystocia (where your baby's shoulder gets stuck during birth). This occurs in around 3-4 in 150 vaginal births for women with diabetes.
- Premature birth (Giving birth before the 37th week of pregnancy)
- Polyhydramnios (too much fluid around the baby, in the womb. Which can lead to premature birth or problems at the time of birth)
- Stillbirth or the baby dying at or around the time of birth (however, this remains uncommon)
- Baby needing additional care once they are born, possibly in a neonatal unit
- Your baby developing low blood sugar or yellowing of the skin and eyes (jaundice) after he or she is born, which may require treatment in hospital
- Being at greater risk of developing obesity and/or diabetes later in life

The risks to you are:

- Increased chance of developing Pre-eclampsia (a condition affecting your blood pressure, which can lead to further complications if not treated)
- Increased chance of perineal tears requiring repair during the birth (particularly if your baby is bigger than average)
- Developing or worsening eye problems (retinopathy)
- Developing or worsening kidney problems (nephropathy)
- Diabetic Ketoacidosis ((DKA)

Please be aware that the risks can be significantly reduced by keeping your blood sugar levels within pregnancy target range, but they cannot be completely eliminated.

Because of these complications, the chance of needing certain interventions is also increased, such as increased chance of Induction of labour or caesarean section. The most effective way to reduce the chance of complications, is to maintain a HbA1c of 48 or below.

If you aren't already under specialist diabetes care you can speak to your GP or Midwife, and they can refer you to us.

Some medications are not safe to use during pregnancy (such as some blood pressure medications and statins) and if you have **not** had a preconception/pregnancy medication review, you should contact your GP or Consultant to request a review as soon as possible.

To reduce the risk of birth defects, Folic Acid 5 mg should ideally be taken for at least three months before pregnancy, up until the 12th week of pregnancy. But if you've not taken any and found out you're pregnant, there is still benefit to starting it anyway. This dose of folic acid is not available over the counter, and you will require a prescription from your GP, Midwife or diabetes team for this. As long as you are able to take aspirin, it is also recommended to start taking 150mg of Aspirin once a day from 12 weeks gestation. This is to reduce the chances of developing pre-eclampsia. This can be prescribed by your Obstetrician, GP or Diabetes Nurses.

If you smoke, you should stop as soon as possible. Speak to your midwife or diabetes nurse about the support available with this. There is specialist pregnancy stop smoking services available for both you and your partner.

HOW WILL HAVING DIABETES AFFECT ME DURING MY PREGNANCY?

During your pregnancy your blood glucose levels and therefore your insulin requirements will increase significantly. Many people find their insulin doses increase by 2 to 3 times the amount by the end of the pregnancy. To help you manage this, your diabetes team will remain in regular contact with you every 1 to 2 weeks and you will be monitored by the obstetric team every 2 to 4 weeks.

In early pregnancy you may experience nausea and vomiting due to the hormones of

pregnancy. Please contact your Diabetes team if you are finding it difficult to manage your diabetes during this time. Ensure you have information about 'sick day rules', if you have Type 1 diabetes, we will also give you a ketone monitor if you don't already have one.

The Maternity team will be closely monitoring your blood pressure and checking your urine for any protein. High blood pressure and proteinuria can be an early indication of pre-eclampsia and we ask you to report any of the following symptoms: a headache that does not resolve, even with paracetamol, visual disturbances such as blurred vision or flashing lights, swelling in your hands, feet and face and pain just below your ribs that is not resolving.

Pregnancy can cause some of the complications of diabetes such as Retinopathy (eyesight problems) and Nephropathy (kidney problems) to worsen. You will be invited to have eye screening during first trimester (if not done in the preceding three months) and third trimester, and your diabetes team will arrange this referral. Additional eye screening will be offered in the second trimester if you have diabetic retinopathy. If caught early, retinopathy can be treated so it is very important to attend these appointments. Nephropathy (kidney problems) will be monitored by regular blood and urine tests during your pregnancy to monitor your kidney function.

Pregnancy can make you less aware of hypoglycaemia and the requirement of tight blood glucose control can make it more likely to happen. If you are experiencing hypoglycaemia during pregnancy, always contact your diabetes team or Maternity Triage for a review (Contact details at the bottom of this leaflet).

HOW WILL HAVING DIABETES AFFECT MY BABY?

Having elevated blood glucose levels in the second and third trimester can cause extra glucose to move across the placenta to baby. This can result in baby growing larger than average, which can cause complications at delivery. If this happens the Obstetric team will discuss the options with you. Because of this, everyone with diabetes is invited for regular growth scans to monitor baby's size from 28 weeks onwards.

Although it remains uncommon, having diabetes also increases the risk of still birth. You can greatly reduce this risk by managing your blood glucose levels within the recommended targets, with the help and support of the diabetes team. We also ask you to carefully monitor your baby's movements, both the pattern and frequency. If there are any changes or you have any concerns with your baby's movements, please contact Maternity triage as soon as possible. More information about baby movements is available from the Tommy's leaflet 'Feeling your baby move' which you can also access via your Badgernet app.

Maternity Triage is open **24 hours a day, every day**. If you have any concerns regarding your diabetes or your pregnancy, please contact them for advice. **01905 733196**

Your Diabetes teams are available Monday-Friday 8am-4pm and the contact details for your area are at the bottom of this leaflet. If you have concerns about your diabetes, please contact them.

BLOOD GLUCOSE MONITORING

Regular and frequent blood glucose monitoring during pregnancy is extremely important to reduce the chance of complications. There are National, recommended targets for blood glucose levels during pregnancy which are as follows:

Pre meal (fasting) less than 5.3 mmol/L

One hour post meal less than 7.8 mmol/L

Two-hour post meal less than 6.4 mmol/L

If you are using a glucose sensor or insulin pump you will need to change your target blood glucose range where possible to 3.9 mmol/L – 7.8mmol/L and should aim for a target of >70% time in range (TIR). If you are having any difficulties with these target ranges, please contact your Diabetes team.

Continuous Glucose monitoring (CGM)

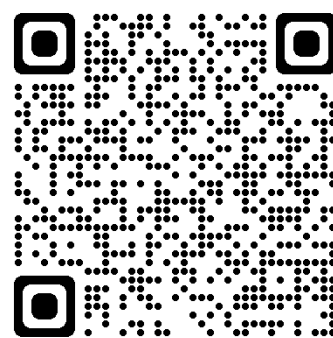
Research has shown that using CGM in pregnancy can help you achieve better blood glucose control and therefore reduce the risk of complications.

If you have type 1 diabetes and are not already using CGM you will be offered this as soon as possible.

If you have type 2 diabetes and are taking insulin during your pregnancy you may also be eligible for CGM and can discuss this with your diabetes team.

DIETARY INFORMATION

Download or Scan the QR code to access the DTN-UK Top Tips for optimising control in pregnancy
<https://abcd.care/dtn-uk-top-tips>



TOP TIPS FOR OPTIMISING GLUCOSE LEVELS IN PREGNANCY.

For further information and ideas of foods to include and avoid, please see the leaflet above.

- ☐ Eating the right type of carbohydrate. Foods with a lower glycaemic index will create a slower and lower rise in glucose after eating.
- ☐ Eating the right amount of carbohydrate. It is important to have enough carbohydrate for energy but too much will make it difficult to achieve the post meal glucose targets. Lower carb meals with snacks between may be better tolerated.
- ☐ Timing of bolus insulin. Giving your quick acting insulin about 10-15 minutes before meals can help limit the post meal rise in glucose levels. As your pregnancy progresses you may need to extend this to 30-40 minutes or longer.
- ☐ Getting breakfast right. Carbohydrate is not well tolerated as this time of day. It may be helpful to have 2 smaller meals containing 15-20g carbs.
- ☐ Being active for 10-15 minutes after meals can reduce post meal glucose levels by as much as 2 mmol/l. This could be going for a walk or just moving about at home or at work.
- ☐ Bulk up meals with protein and vegetables/salad to fill you up and flatten out the post meal glucose rise.
- ☐ Avoid eating carbohydrate late in the evening to help maintain good glucose levels overnight. Try to eat your evening meal before 7.30pm and keep any evening snacks to minimal carbohydrate.
- ☐ It is important to accurately count carbohydrate to help you adjust your insulin doses and optimise your glucose levels. Please contact us to book on a carbohydrate counting course wah-tr.worcsdiabetesed@nhs.net or ask your Diabetes Team to refer you.

- Snacking between meals can help avoid hypos, manage hunger and optimise nutrition. Try slowly digested carbohydrate foods such as fruit, yogurt, wholewheat crackers or oat crackers with protein toppings.
- Keep a food diary to help you learn what foods work well for you and what to avoid.

BIRTH

Options and Recommendations

You will be encouraged to birth your baby in a hospital setting. This is to ensure that both you and your baby have access to extra monitoring and urgent specialist attention should you need it.

National guidelines suggest that women with type 1 or type 2 Diabetes (and no other complications) are offered an induction of labour or caesarean section between 37 to 38+6 week's gestation, unless you labour spontaneously before this time. However, it may be recommended to birth your baby sooner than this, if there are concerns for you or your baby. Your team will discuss your options with you during your antenatal appointments, so a plan can be made in partnership with you.

If your baby is going to be delivered prematurely (especially before 36 weeks), you will be offered steroid injections. Giving you steroid injections shortly before your baby is born reduces the risk of them having serious complications including problems with their breathing, bleeding into their brain and developmental delay. However, Steroids can cause a significant rise in blood glucose levels. You will be admitted to hospital for 24-48 hours to have your steroid injections and if needed, an intravenous insulin infusion/(drip) would be started to help you manage your blood glucose levels.

If you usually take basal/ background insulin you can continue to take this whilst on the insulin infusion. You should stop any rapid acting/mealtime insulin whilst on the insulin infusion. If you are using an insulin pump you can continue your basal insulin but should not take any boluses whilst you are on the insulin infusion.

If you are using a closed loop insulin pump you can use this to try to manage your blood glucose levels from the steroids. If this is not possible and your blood glucose levels become elevated, it may be necessary to go onto an intravenous insulin infusion. Whilst on the infusion you should exit closed loop function and can continue basal rates alongside the infusion.

During Labour

It is recommended that your baby is monitored continuously during labour. This is done by using a monitor called a cardiotocograph (CTG) and is attached around your bump with stretchy straps. This enables Midwives and Doctors looking after to you, to know how your baby is tolerating labour.

During labour your midwife will monitor your blood glucose levels every hour, by finger prick test. The target blood glucose level in labour is 4.0- 7.0 mmol/L. If your blood glucose level becomes elevated above 7.0mmol/l on 2 consecutive occasions, it will be recommended that you start an intravenous insulin infusion.

If you usually take basal/ background insulin you can continue to take this alongside the insulin infusion. You should stop any rapid acting/mealtime insulins and Metformin.

If you are using an insulin pump and you, or your partner, can continue to manage this, you can continue your basal rate but should not take any boluses whilst you are on the insulin infusion. If you are using a closed loop insulin pump you should exit closed loop function and can continue basal rates alongside the infusion.

The midwife looking after you will be monitoring you closely and will be able to advise you about recommendations for your care. The diabetes team are also based in the hospital and can be contacted if any concerns arise.

AFTER BIRTH

Managing your blood glucose levels postnatally.

Your blood glucose levels will very quickly return to their pre-pregnancy level after the birth of your baby. This will mean you will need to reduce your insulin or diabetes medication to your pre-pregnancy doses. The exact doses of insulin you should take postnatally will be explained to you and documented by your diabetes team in your postnatal plan on Badgernet. Your Midwife and Obstetrician will also be able to access this. If you are using a closed loop insulin pump you may need to stop using the closed loop function for a period after delivery. This will be discussed with you and documented in your postnatal plan. The diabetes inpatient team will review you whilst you are in hospital and can help with any further adjustments which need to be made.

Your diabetes control can be relaxed after delivery to reduce the risk of hypoglycaemia. During your hospital stay **after birth**, we will aim for your blood glucose levels to be 7.0-11.0 mmol/l.

Breastfeeding can further reduce your insulin requirements. If you are planning to breastfeed, it is likely you will need about 30% less insulin after delivery. Please discuss this with your diabetes team so they can provide you with an individual postnatal plan. You should test your blood glucose levels before each feed and have a carbohydrate containing snack nearby should you need it.

Postnatal management of baby

It is recommended to feed baby within 30 minutes of birth to help maintain temperature and blood glucose levels. You can express colostrum (the first breastmilk) during pregnancy to bring in with you and this can be given to baby if needed. Your midwife will discuss this with you at around 36 weeks. More information about antenatal hand

expressing can be found on Badgernet in the 'Off to the best start' leaflet.

You and your baby are likely to remain in hospital for at least 24 hours after delivery for monitoring. This is because after delivery it is possible that baby can experience low blood glucose levels. The maternity staff will monitor this and can support you in feeding baby as soon as possible to help prevent this from happening. Some babies do require admission to special care for a feeding tube or intravenous glucose drip to help manage this.

Following discharge from hospital

The hospital team will inform your usual diabetes team that you have been discharged from hospital and they will contact you as soon as possible. If you need assistance before this, please use the contact details provided in this leaflet. If you need urgent advice or support for you, or your baby, you can call Maternity Triage 24 hours a day. In case of an emergency, call 999.

Further information can be found via the following:

Diabetes UK

Helpline: 0345 123 2399

Email: helpline@diabetes.org.uk

Website: www.diabetes.org.uk

IMPORTANT CONTACTS

Diabetes Specialist Nurse Teams:

- South Worcestershire 01905 760775
Email: wah-tr.wrhcutediabetes@nhs.net
- Wyre Forest 01562 826385
Email: wah-tr.wyreforestdiabetes@nhs.net
- Redditch/Bromsgrove 01527 505782
Email: Wah-tr.redditchbromsgrovediabetes@nhs.net

Maternity Triage (24 hours)

01905 733196

Produced by:

Diabetes Specialist Service

Worcestershire Acute Hospitals NHS Trust

If your symptoms or condition worsens, or if you are concerned about anything, please call your GP, 111, or 999 or maternity triage 01905 733196

Patient Experience

We know that being admitted to hospital can be a difficult and unsettling time for you and your loved ones. If you have any questions or concerns, please do speak with a member of staff on the ward or in the relevant department who will do their best to answer your questions and reassure you.

Feedback

Feedback is really important and useful to us – it can tell us where we are working well and where improvements can be made. There are lots of ways you can share your experience with us including completing our Friends and Family Test – cards are available and can be posted on all wards, departments and clinics at our hospitals. We value your comments and feedback and thank you for taking the time to share this with us.

Patient Advice and Liaison Service (PALS)

If you have any concerns or questions about your care, we advise you to talk with the nurse in charge or the department manager in the first instance as they are best placed to answer any questions or resolve concerns quickly. If the relevant member of staff is unable to help resolve your concern, you can contact the PALS Team. We offer informal help, advice or support about any aspect of hospital services & experiences.

Our PALS team will liaise with the various departments in our hospitals on your behalf, if you feel unable to do so, to resolve your problems and where appropriate refer to outside help.

If you are still unhappy you can contact the Complaints Department, who can investigate your concerns. You can make a complaint orally, electronically or in writing and we can advise and guide you through the complaint's procedure.

How to contact PALS:

Telephone Patient Services: 0300 123 1732 or via email at: wah-tr.PET@nhs.net

Opening times:

The PALS telephone lines are open Monday to Thursday from 8.30am to 4.30pm and Friday: 8.30am to 4.00pm. Please be aware that a voicemail service is in use at busy times, but messages will be returned as quickly as possible.

If you are unable to understand this leaflet, please communicate with a member of staff.