

NHS No. 1 0 0 1 0 0 1 0 0 0

Maternity Unit THE HOSPITAL

**CONFIDENTIAL**

These notes should be carried by the expectant mother at all times during her pregnancy. If found, please return the notes immediately to the owner, or her midwife or maternity unit.



# Diabetes in Pregnancy



## Notes

First name	Hannah		Surname	Evans	
Address	75 Harborne Road, Edgbaston				
	Birmingham				
Postcode	B	1	5	3	D H
	Phone		0121 607 0101		
Date of birth	1	1	1	2	7 8
Unit No.	A123456				

### Maternity unit

The Hospital

### Intended Place of birth

The Hospital

### Lead Professionals

Diabetologist Dr Jones

Obstetrician Mr Smith

### Contacts

Diabetes Clinic	Victoria Clinic	Phone	0121 222 3333
Diabetes Midwife Specialist	D Midwife	Phone	ex 2345
Diabetes Nurse Specialist	D Nurse	Phone	ex 3456
Dietitian	D Dietitian	Phone	ex 9876
Interpreter		Phone	

### Signatures

Anyone writing in these notes should record their name and signature here

Con - Consultant; DNS = Diabetes Nurse Specialist; DSM = Diabetes Specialist Midwife; Dtn = Dietitian; FY = Foundation Year Doctor; GP - General Practitioner; HCA - Health Care Asst; MW - Midwife; Ph - Phlebotomist; STR = Speciality Training Registrar; US - Ultrasonographer

Name (print clearly)	Post	Signature	Name (print clearly)	Post	Signature
Debbie Midwife	DSM	D Midwife			
John Jones	Con	J Jones			
Mark Smith	Con	M Smith			
Diane Dietitian	Dietitian	D Dietitian			

### Support Groups /Additional Information

Alcohol concern	0300 123 1110	National Domestic Violence Helpline	0808 200 0247
Antenatal results and choices	0207 713 7486	NHS Choices – Diabetes	www.nhs.uk
Citizens Advice Bureau	0344 411 1444	<b>NHS Direct</b>	111
Diabetes UK Careline	0345 123 2399	NHS Pregnancy Smoking Helpline	0300 123 1044
Diabetes in Pregnancy – Nice guidance	www.nice.org.uk	Working families (Rights and Benefits)	0300 012 0312
Frank about Drugs	0300 123 6600		

# First appointment

## Medical history

Date **1 8 0 5 1 5** Height **1 6 8** Booking weight **7 5** BMI **2 6** Booking B/P **100 / 64**

Details:

*Nil of note*

### Family history of diabetes

Parent  Type **2**  
 Sibling  Type   
 Other  Type

### Pre-conception care

Planned pregnancy  No  Yes  
 Preconceptional advice  No  Yes  
 Preconceptional HbA1c  No  Yes  
 Result   
 Advice given by **N/A**

### Smoking and alcohol

No Yes  
 Smoking  No  Yes No. per day   
 Alcohol  No  Yes Units per week

Folic Acid  No  Yes Start date **1 0 1 0 1 4**  
 Dose 0.4mg  Pre-conception   
 5mg  Post-conception

### Diabetes complications

	Normal	Abnormal	Date	Details		Normal	Abnormal	Date	Details
Eyes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	N/A	IHD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	N/A
Feet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	N/A	Neuropathy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	N/A
Kidneys	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	N/A	Hypertension	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	N/A

### Oral Glucose tolerance test (OGTT)

Date **1 4 0 5 1 5** Gestation **2 / 4+4**  
 0 mins **4.9** mmol/l 120 mins **9.8** mmol/l

Date  Gestation   
 0 mins  mmol/l 120 mins  mmol/l

### Gestational diabetes screening (based on the following risk factors)

BMI > 30 kg/m<sup>2</sup>  Family history - first degree relative   
 Previous unexplained stillbirth  Family Origin   
 Previous gestational diabetes  Ethnicity **African**  
 Polycystic ovarian syndrome  Glycosuria > +   
 Previous baby's birth weight > 4.5kg or >90th Centile  Polyhydramnios or macrosomia (current pregnancy)   
 Other

### Previous pregnancies

Date	Gestation at delivery	Mode of delivery	Sex	Outcome / complications	Birth weight	Centile	Diabetes status	Insulin
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<i>Primigravida</i>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

### Medication

BF = Breakfast; L = Lunch; E = Evening; BT = Bedtime

Type of Insulin	Dose in units				Oral hypoglycaemic agents (OHAs)
	BF	L	E	BT	
<b>N/A</b>					

Other medication details (including pre-pregnancy medication, Statins and ACE inhibitors)

*None*

Date **1 8 0 5 1 5** Signature\* **D Midwife**

## Initial investigations (as indicated)

	Accepted and taken		Results	Action	Signed*
	Explained	No Yes			
HbA1c	<input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	45mmol/mol		D Midwife
Thyroid function	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>			
ACR	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>			
Serum creatinine	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>			
<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>			
<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>			

  

<table border="1"> <tr><td>1</td><td>8</td><td>0</td><td>5</td><td>1</td><td>5</td></tr> <tr><td colspan="6">D Midwife</td></tr> <tr><td colspan="6">Care provider</td></tr> </table>	1	8	0	5	1	5	D Midwife						Care provider						<table border="1"> <tr><td>1</td><td>8</td><td>0</td><td>5</td><td>1</td><td>5</td></tr> <tr><td colspan="6">D Midwife</td></tr> <tr><td colspan="6">Care provider</td></tr> </table>	1	8	0	5	1	5	D Midwife						Care provider						Comments  Signed*
1	8	0	5	1	5																																	
D Midwife																																						
Care provider																																						
1	8	0	5	1	5																																	
D Midwife																																						
Care provider																																						

## Information checklist Care provider should sign, following discussion with mother

	Discussed	Leaflets	Further advice / Comments	Signed*
Benefits of good diabetes control	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Discussed importance of good glycaemic control	D Midwife
Antenatal care plan, including visits, scans	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		D Midwife
Review medication - discontinue if required	<input checked="" type="checkbox"/>	<input type="checkbox"/> n/a		D Midwife
Aspirin from 12 weeks gestation	<input type="checkbox"/> n/a	<input type="checkbox"/>		D Midwife
Smoking cessation	<input type="checkbox"/> n/a	<input type="checkbox"/>		D Midwife
Exercise	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		D Midwife
Expressing colostrum 36-37 weeks	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		D Midwife
Labour and birth	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		D Midwife
Variable rate intravenous insulin infusion for labour and birth	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		D Midwife
Postnatal fasting blood glucose or HBA1c	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	To attend diabetes clinic for postnatal F/U	D Midwife
Postnatal management/treatment	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		D Midwife
Care of your baby after birth	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		D Midwife
Infant feeding	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		D Midwife
Pre-prandial (before food) - agreed target	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		D Midwife
Post-prandial (after food) - agreed target	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		D Midwife
HbA1c - agreed target	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		D Midwife
Hypoglycaemia	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		D Midwife
Glucagon kit	<input type="checkbox"/> n/a	<input type="checkbox"/>		D Midwife
Sick Day Rules	<input type="checkbox"/> n/a	<input type="checkbox"/>		D Midwife
Blood ketone testing	<input type="checkbox"/> n/a	<input type="checkbox"/>		D Midwife
Driving	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	To inform the DVLA and car insurance provider	D Midwife

## Blood glucose monitoring equipment

	Explained	Demonstrated	Observed	Details
Machine type	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Test strips type	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Quality control	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Safe disposal of sharps	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Date	1 8 0 5 1 5	1 8 0 5 1 5	1 8 0 5 1 5	
Signed*	D Midwife	D Midwife	D Midwife	
	Care provider	Care provider	Care provider	

OGTT = Oral Glucose Tolerance Test  
ACR = Albumin Creatinine Ratio

\* Signatures must be listed on page 1 for identification

Name	Hannah Evans						
Unit No/	A	1	2	3	4	5	6
NHS No							

## What is diabetes?

Diabetes affects the way your body turns food into energy. When you eat, your body changes food into a sugar called glucose. Glucose is the “fuel” your body needs for all your activities and is also needed to help your baby grow. Diabetes makes it difficult for your body to use glucose as fuel. All people with diabetes have the same problem - too much glucose in the blood.

To carry glucose from your bloodstream to your cells, your body uses insulin. Insulin is a hormone made by a gland near your stomach called the pancreas. Diabetes is caused either by your body not making enough insulin, or not being able to use insulin properly. Glucose is not carried to your cells, so too much stays in the bloodstream. Left untreated, high blood glucose can damage your body. The extra glucose will also be passed to your baby.

The type of food eaten and meal planning are important to control diabetes. The aim is to maintain your blood glucose levels within target ranges agreed by you and your team. It is important to eat a wide variety of foods and have regular meals which include some starchy food e.g. bread, chapattis, rice, potatoes and pasta. Your health team will advise you on your daily recommended amount of fruit and vegetables. Eat iron and calcium rich food on a daily basis. Avoid sugar and foods high in sugar and keep high fat and fried food to a minimum. Regular exercise e.g. walking, swimming and aqua natal classes are important to keep you fit and supple. These may have a positive effect on lowering your blood glucose levels. Discuss this with your healthcare team.

The aim of treating diabetes in pregnancy is to prevent complications for both you and your baby.

## Diabetes in Pregnancy

These notes are used to record information about the care of your diabetes during pregnancy. They contain information for you and your family about diabetes and pregnancy to help you make informed choices about your treatment. They are designed to be used in addition to your own hand held pregnancy notes/electronic record. You will need to take both sets to each appointment so that you and your care team are fully informed about your treatment, choices and plan of care for your pregnancy, during the birth of your baby and the plan of care for you and your baby following birth.

As you have diabetes, you will need to be monitored closely to keep you and your baby healthy. You will require more frequent hospital appointments and ultrasound scans to help you keep good control of your blood glucose and check your baby's growth and development. You will be cared for by a specialist diabetes/antenatal team. These are health professionals with specialist knowledge of diabetes and pregnancy who work together to care for you and your baby. The team will encourage you to carry out extra blood glucose tests and agree personal target levels with you. Depending on how your diabetes is treated, you may find that you are more at risk of hypos due to tighter glucose control.

If you have Type 1 Diabetes, your care team will give you testing strips and a blood monitor to test for blood ketones if your blood glucose levels are too high (hyperglycaemia) or if you are unwell. Some of the medication that you have been taking before getting pregnant may need to be altered or stopped now you are pregnant. Some medications are not safe to take in pregnancy.

Make sure that you are taking the correct dose of folic acid tablets. Women who have diabetes before getting pregnant need an increased dose which can only be prescribed by a doctor and not bought over the counter at the chemist.

**The correct dose is 5mgs.** If you are not taking 5mgs, please ensure that you tell your GP or diabetes specialist team so that they can change your dose immediately. Taking folic acid helps to prevent your baby from developing birth defects, such as spina bifida. It is recommended that you take folic acid tablets while you are trying to get pregnant and up to the 13th week of pregnancy. If you need any advice, speak to your health care team.

The pregnancy planner on page 6 outlines the minimum visits you should have.

Your team may include some of the following health care professionals:-

### **Diabetologist or Endocrinologist**

A doctor who cares for people with hormone disorders, such as diabetes. You may see him/her after the birth to continue to care for your diabetes. They will work alongside the antenatal team to monitor your blood glucose control and any complications connected to your diabetes during your pregnancy.

### **Obstetrician/Maternal Fetal Medicine Specialists (MFM)**

A doctor who specialises in the care of women during pregnancy, childbirth and after the birth of your baby. Your obstetrician/MFM specialist will also be experienced in caring for pregnant women with diabetes. They will work in partnership with you and your family to ensure you can make informed decisions about your care. They will monitor you and your baby's health and wellbeing.

### **Midwife**

He/she will provide care and support for women and families during pregnancy and childbirth. Whilst you are pregnant your midwife may see you at your GP surgery/hospital/health centre and will visit you at home after the birth of your baby. Your midwife is also able to offer support and advice on issues such as preparing for birth and infant feeding.

### **Diabetes Midwife/Nurse Specialist**

He/she has specialist knowledge of diabetes and will work in providing support and education to help women manage their diabetes during pregnancy, birth and after the baby is born. Their role includes - teaching you how and when to check your blood glucose levels; teaching you how to manage your medication; lifestyle choices; provide telephone support between hospital visits and provide training to other health care professionals about diabetes in pregnancy.

### **Dietitian**

He/she supports you with making dietary and activity choices that will help you to keep your blood glucose levels within target ranges. They may also give advice about healthy weight gain, eating a balanced diet, caffeine intake and food safety.



# Dietitian

Date	Gestation	Details	Signed*
180515	24+4	Review following positive OGTT.	D Dietitian
1430		Advised re healthy eating, regular meals and snacking. Food safety discussed. Exercise and its impact on helping to control blood glucose control in pregnancy discussed. Hannah has contact numbers to contact me if she has any further questions.	
02.07.15	31+1	Reviewed - Hannah changed from BD insulin to basal bolus	D Dietitian
14.00		regime. Carbohydrate contents of meals discussed. Advised re bedtime snacks and carrying hypo treatment/blood glucose meter at all times e.g. car, handbag.	

\* Signatures must be listed on page 1 for identification

## Pregnancy Planner

The aim of good diabetes control in pregnancy is to reduce the chance of complications for both you and your baby. You will be offered frequent appointments (usually every 1-2 weeks) with the health care team. The planner below outlines the minimum visits you should have, this will depend on your individual circumstances, and you may be offered more. At each appointment from 28 weeks, your health care team will offer tests to check your baby's wellbeing, which may include an ultrasound scan. Your blood pressure and urine will be tested at each appointment. This planner can be used by the team, who will tick the boxes to show you who you should see and when.

Appointment	Your care should include	Diab	Obs	DSM/ DSN	Dtn	CMW	Scans
<b>First appointment</b> Joint diabetes and antenatal clinic	Advice, information, target levels and support about your blood glucose levels (including a blood test to check your HbA1c level). Ask questions about your health and your diabetes. Discuss current medications. Offer you an eye examination and a kidney test – if these have not been done in the last 12 months. Check folic acid dose.						
<b>7-9 weeks</b>	An ultrasound scan to check how many weeks pregnant you are.						
<b>Booking appointment</b> Ideally by 10 weeks	Information, education and advice about how diabetes will affect your pregnancy, birth and early parenting (breast feeding and initial care of your baby). Aspirin 75mgs from 12 weeks gestation.						
<b>1st trimester screening</b> 10 weeks – 14 weeks + 1 day	Combined test – offer screening for Down's, Edwards' and Patau's syndrome. Involves a blood test and an ultrasound scan. Information is found in NSC leaflet "Screening tests for you and your baby".						
<b>16 weeks</b>	Offer you an eye examination if you have diabetes before getting pregnant and you were found to have diabetic retinopathy at your first appointment. Review, discuss and record any screening tests from your last visit. Offer 2nd trimester screening if 1st trimester screening was unsuitable e.g. late booking in pregnancy.						
<b>20 weeks</b>	Offer you an ultrasound scan to check the physical development of your baby, including a detailed check on the development of your baby's heart.						
<b>25 weeks</b>	If this is your first baby /or you are receiving increased monitoring in your pregnancy, your midwife/doctor will check you and your baby's health and wellbeing.						
<b>28 weeks</b>	Offer an ultrasound scan to monitor the wellbeing of your baby. Discuss you monitoring your baby's daily pattern of movements. Offer you an eye examination if you had diabetes before you became pregnant. Offer anti-D injection if you are rhesus negative blood group. You may be offered to see an anaesthetist if an anaesthetic is likely to be needed for labour and birth.	✓	✓	✓	✓	✓	✓
<b>32 weeks</b>	Offer an ultrasound scan to monitor the health and wellbeing of your baby. Your midwife/doctor will check you and your baby's health and wellbeing.	✓	✓	✓			✓
<b>34 weeks</b>	May be offered 2nd anti-D injection if you are rhesus negative blood group.			✓			
<b>36 weeks</b>	Offer an ultrasound scan to monitor the health and wellbeing of your baby. Give you information and advice about planning the birth, including types of birth, pain relief and anaesthetic. Offer advice on expressing colostrum in preparation for feeding your baby after birth. Changes to medications during and straight after birth. Information about you looking after your baby, including breastfeeding and the effects of breastfeeding on your blood glucose levels. Advise on contraception, follow up care. Advise you to have your labour induced, or a caesarean section before 37 weeks if there are complications.	✓	✓	✓			✓
<b>37 weeks</b>	If you have diabetes before getting pregnant, you will be advised to have your labour induced or caesarean section during week 37 or week 38 if there are no complications.						
<b>38 weeks</b>	Offer regular checks for you and your baby's health and wellbeing if you are waiting for your labour to start spontaneously.	✓	✓	✓			✓
<b>Every week from 39 weeks to birth</b>	Offer regular checks for you and your baby's health and wellbeing. If you have developed diabetes in your pregnancy, and have not developed any complications, you will be advised to have your baby no later than 40 weeks and 6 days.	✓	✓	✓			



# Diabetes Details

Agreed EDD 0 4 0 9 1 5

<b>Type of Diabetes</b> Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Gestational <input checked="" type="checkbox"/> Other <input type="checkbox"/> Date of diagnosis 1 4 0 5 1 5	<b>Retinal assessment</b> (as indicated) Date      Left eye      Right eye      Results / Action			<b>Ultrasound scans</b> Type      Date      Result			
	D D M M Y Y	N/A	N/A		Booking	1 6 0 2 1 5	NAD
	D D M M Y Y				Anomaly	1 6 0 2 1 5	NAD
	D D M M Y Y				Cardiac	D D M M Y Y	N/A
Special considerations							

## Antenatal visits

Gest = Gestation; B/P = Blood Pressure; EFW = Estimated Fetal Weight.

BF = Breakfast; L = Lunch; E = Evening; BT = Bedtime

Date/Time	Gest	Weight (Kg)	B/P	Urinalysis	HbA1c	EFW	Medication	Dose/insulin in units			
								BF	L	E	BT
18.05.15	24+4	80	118/64	+gluc	45		Diet				
Any admissions since last appt. No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Reason:											
Comments <i>Review in 1 week.</i>											
								Signed* <i>D Midwife</i>		Next contact <i>1/52</i>	
28.05.15	26+1	81	110/66	NAD			Novomix 30	16		24	
Any admissions since last appt. No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Reason:											
Comments <i>Started on insulin, discussed hypoglycaemia and driving. Telephone contact tomorrow with DSM.</i>											
								Signed* <i>J Jones</i>		Next contact <i>2/52</i>	
11.06.15	28+1	83	122/62	NAD	48	1300g	Novomix30	16		32	
Any admissions since last appt. No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Reason:											
Comments <i>Insulin doses increased. Growth scan performed today.</i>											
								Signed* <i>J Jones</i>		Next contact <i>3/52</i>	
02.07.15	31+1	83	120/70	NAD	48	1900g	Novomix30	22		40	
Any admissions since last appt. No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Reason:											
Comments <i>Review by dietitian and insulin dose increased. Growth scan performed today</i>											
								Signed* <i>D Midwife</i>		Next contact <i>2/52</i>	
16.07.15	33+1	84	110/70	NAD		2300g	Novorapid	12	12	20	
Any admissions since last appt. No <input type="checkbox"/> Yes <input type="checkbox"/> Reason:											
Comments <i>Insulin regime changed to basal bolus regime. Growth scan performed today.</i>											
											22
								Signed* <i>D Midwife</i>		Next contact <i>2/52</i>	

\* Signatures must be listed on page 1 for identification

Name *Hannah Evans*

Unit No/ NHS No *A 1 2 3 4 5 6*

## Types of Diabetes

### Gestational diabetes

#### What is gestational diabetes (GDM)?

Gestational diabetes occurs in pregnant women who do not already have diabetes; it often develops later in pregnancy, when the body produces large amounts of hormones that help the baby grow. These hormones prevent insulin from meeting the extra needs in pregnancy. When this happens your blood glucose levels rise.

If diabetes is detected in early pregnancy, the condition is most likely to have developed before getting pregnant but only detected from screening tests done in pregnancy.

GDM can affect 3-5% of all pregnancies. This means that 1 in 25 women will develop diabetes in their pregnancy.

#### Will I always have diabetes?

Gestational diabetes usually goes away after your baby is born, but in a few women, diabetes becomes permanent and it is very important that you are tested for this. Your health care team will discuss with you the timing, what type of test and where it will be carried out after the birth of your baby. You are more likely to develop GDM again in future pregnancies. It is essential that you get advice from your GP/Practice nurse at your surgery when planning your next pregnancy.

It is important to maintain a healthy diet, control your weight and exercise regularly. Taking care of yourself now can help prevent diabetes later.

### Pre-existing diabetes

Most women with diabetes have an uncomplicated pregnancy and a healthy baby. However, there is an increased risk of some problems such as neural tube and heart defects, fetal growth problems and stillbirth. Planning your pregnancy, taking the correct dose of folic acid tablets (**5mgs**), good glucose control and careful monitoring can reduce these risks. Ask your health care team about a dedicated pre conception clinic to support you before you try to get pregnant.

#### Treatment during pregnancy

If your diabetes is treated with insulin, you may need to change your insulin doses frequently during pregnancy. If your diabetes is treated with tablets, these may be replaced by insulin injections. If you are on diet alone for your diabetes, you may need to be started on tablets or insulin or both combined at some stage.

If you have Type 1 Diabetes and are experiencing difficulties with your blood glucose control and insulin doses, your health care team may recommend that you wear a continuous glucose monitor (CGMS) which will give information about your glucose levels for a period of time e.g. 48-72 hours. It can monitor whether your glucose is high or low, and see how your glucose levels vary, for example while you are sleeping, after you eat, when you exercise, or when you are feeling unwell. Your team will discuss this option with you if it is appropriate.

An insulin pump (continuous subcutaneous insulin infusion) is a small device that delivers insulin through a length of tubing to a small needle that is inserted into the fat layer under the skin. Insulin is pumped continually at a preprogrammed rate and the pump user programmes the pump to give an amount of insulin with meals and snacks based on the amount of carbohydrate in the food eaten. Your team will discuss this option with you if it is appropriate.

You need to be referred to the diabetes/antenatal clinic as soon as you find out you are pregnant. Ask about any other treatments/medications you are taking. Many tablets, such as those for high blood pressure, high cholesterol or kidney problems, need to be altered or stopped during your pregnancy.

It is important that you take regular folic acid supplements during the first three months of your pregnancy. The dose should be **5mgs** rather than the usual 400mcgs tablet given to mothers without diabetes. This needs to be prescribed by a doctor.

Diabetes can affect the back of the eyes, causing retinopathy. This can develop or worsen during pregnancy and so you should have your eyes examined more often. If you have any complications from your diabetes, you will require careful monitoring during pregnancy. You should discuss any concerns with your health care team.

#### Sick day rules

During illness, never stop taking your insulin. Your body is likely to become more insulin resistant during illness, so monitor your blood glucose and ketones closely – every 2 hours as you may need more insulin (this refers predominantly to Type 1 Diabetes). Your antenatal team will be able to advise you of the best way to increase your quick acting insulin doses when your blood glucose levels are above your agreed target.

**NEVER STOP** taking your long acting insulin. If you are unable to eat solids, replace with liquid foods such as soup, milk or fruit yoghurt. Drink sugar free fluids at least 100mls every hour. If you are not eating, use quick acting insulin to correct high blood glucose readings.

If you have Type 1 Diabetes your body does not produce insulin and cannot use glucose in the blood. Therefore the body is starved of energy and will break down fat to use as fuel, this results in ketones being produced. This is an acid and can be toxic. A build-up of these acids in the body can lead to a serious condition known as ketoacidosis or DKA. In pregnancy ketones can develop very quickly even when blood glucose levels are only slightly high, or even when blood glucose levels are normal.

If required you will be given a blood ketone testing meter. Increasing amounts of ketones would be a concern when you are unwell especially when pregnant. Acting quickly when you are unwell to stay well hydrated (drinking more sugar free fluids than usual), and ensuring you have enough insulin can help you avoid DKA. Typical symptoms of DKA are: breathlessness, passing urine more often, feeling weak, sickness, vomiting and abdominal pain.

**If you have any of these symptoms contact your maternity unit immediately. You will need to be reviewed at the hospital to assess what medication/care you and your baby need.**



# Antenatal visits

Gest = Gestation; B/P = Blood Pressure; EFW = Estimated Fetal Weight.

BF = Breakfast; L = Lunch; E = Evening; BT = Bedtime

Date/Time	Gest	Weight (Kg)	B/P	Urinalysis	HbA1c	EFW	Medication	Dose/insulin in units				
								BF	L	E	BT	
30.07.15	35+1	84	116/74	NAD	44	2850g	Novorapid	12	14	14		
Any admissions since last appt. No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Reason:							Insulatard					22
Comments <i>Insulin doses increased. Growth scan performed today.</i>							Signed* <i>J Jones</i>					Next contact 2/52
13.08.15	37+1	86	120/70	NAD			Novorapid	14	18	28		
Any admissions since last appt. No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Reason:							Insulatard					22
Comments <i>Insulin doses increased. Induction of labour booked for 30.08.15. Post natal plan - see page 13. Telephone contact next week.</i>							Signed* <i>J Jones</i>					Next contact N/A
Any admissions since last appt. No <input type="checkbox"/> Yes <input type="checkbox"/> Reason:												
Comments												
Any admissions since last appt. No <input type="checkbox"/> Yes <input type="checkbox"/> Reason:												
Comments												
Any admissions since last appt. No <input type="checkbox"/> Yes <input type="checkbox"/> Reason:												
Comments												
Any admissions since last appt. No <input type="checkbox"/> Yes <input type="checkbox"/> Reason:												
Comments												

\* Signatures must be listed on page I for identification

Name *Hannah Evans*

Unit No/ NHS No *A 1 2 3 4 5 6*



## How is diabetes treated in pregnancy?

### Meet with the dietitian

For anyone with diabetes, the types of food eaten and meal planning are important to control diabetes. All food can turn into glucose. A dietitian can help you learn how to control your blood glucose and provide good nutrition for you and your baby. It is important to:

- Eat a wide variety of foods.
- Avoid sugar and food/drinks high in sugar.
- Have regular meals which include some starchy food e.g. bread, chapattis, rice, potatoes, pasta.
- Your health professional will advise you on your daily recommended amounts of fruit and vegetables.
- Include iron and calcium rich foods on a daily basis.
- Keep high fat and fried foods to a minimum.
- Avoid liver, all pates and uncooked meat.
- Avoid alcohol during pregnancy.

### Test your blood glucose with a meter

Your healthcare team will teach you how to do this. They will advise you when to test and what blood glucose levels to aim for. This helps you and your team to know how you are responding to treatment. You may wish to use the charts on pages 14-19 to record your blood glucose results.

### Take insulin and/or tablets as directed by your healthcare team

You may need insulin injections if your body is not able to make enough insulin to control your blood glucose levels. You will be taught how to give yourself insulin safely. Some women may also be treated with tablets after discussion with the diabetes specialist team.

### Metformin treatment

Metformin is available in tablets or dispersible powder to be taken as a liquid. It works by making your body more sensitive to insulin and reduces the production of extra glucose made by your liver. Some people may experience stomach upsets such as feeling sick, diarrhoea and loss of appetite. To reduce this happening, take Metformin with food or straight after food.

### Glibenclamide treatment

This tablet works by stimulating your pancreas to make more insulin, which in turn will help lower the amount of glucose in your blood. It should be taken with or immediately after food. It is available for women that have developed gestational diabetes (GDM) who cannot tolerate Metformin treatment, or who have used Metformin and their blood glucose levels are still not within target ranges. It can be used as an alternative to insulin injections. Your team will discuss this option with you if it is appropriate.

### Coping with hypoglycaemia (hypo) (only if treated with insulin or Glibenclamide)

If your blood glucose level drops below 4.0mmol/L you may begin to feel unwell. You may have symptoms such as sweating, shaking or poor concentration this is called a "hypo". It is important to recognise and treat a hypo as you may become unconscious if your blood glucose level drops further. This is not good for you or your baby.

Always carry your blood glucose meter with you, so that if you develop any symptoms of a hypo, you can test and record your blood glucose level. You should always carry something to treat a hypo, such as an energy drink, glucose tablets or glucose gel. After treating your hypo with fast acting glucose, you should eat a carbohydrate snack such as a sandwich, toast or a biscuit.

If you have Type 1 diabetes - friends, family and work colleagues can be taught how to treat a severe hypo if you are unable to treat yourself. Glucagon is usually given by injection beneath the skin, in the muscle. It comes as a powder and liquid that will need to be mixed just before administering the dose. Instructions for mixing and giving the injection are in the package. If you are unable to eat or swallow, glucagon is the preferred method to treat your hypo. Sometimes you may have a hypo and not realise it.

It is particularly important to check your blood glucose level before driving and eat a snack if your blood glucose level is low. Wait 45 minutes after treating your hypo, recheck your blood glucose level and make sure it is 5.0mmol/L or above, before continuing to drive.

**Let your specialist team know if you are having hypos**

### Monitoring during your pregnancy

Due to your diabetes, you may need extra antenatal appointments which will include extra ultrasound scans to check your baby's growth and wellbeing.

### Preparing for birth

Your healthcare team will discuss with you the best way to deliver your baby and at what stage in your pregnancy. The aim is for a normal labour and birth where possible. If your labour starts spontaneously; has to be induced before 37 weeks or you have a planned caesarean section, steroids may be offered to you to help mature your baby's lungs. This may increase your blood glucose levels for a short period of time after the steroids are given. It is essential that your blood glucose levels are monitored very closely and additional insulin doses are given. This may involve you being admitted to hospital to receive insulin via an infusion (drip). Please do not hesitate to ask your healthcare team if you have any questions.

## Care during and after the birth

### Labour and birth

Your healthcare team should advise you to have your baby in a hospital that can provide appropriate care for you baby 24 hours a day. Your team should discuss with you the risks and benefits of a vaginal birth, induced labour and caesarean section. It is important that your blood glucose levels are well controlled during labour and birth, to help prevent your baby's blood glucose level becoming low. Therefore during labour, your blood glucose will be checked every hour; the aim is to maintain them between 4 and 7 mmol/litre. You may need to have an insulin infusion (drip) during labour and birth. This is where a continuous amount of insulin is fed into your blood through a tube.

### Care of your diabetes after your baby is born

Your body will need less insulin to control your blood glucose levels after your baby is born.

#### Gestational diabetes

If you have gestational diabetes, you can usually stop treatment once your baby is born. Before you go home from hospital your blood glucose levels will be tested to make sure that it has returned to normal. You should be offered a test to check if you still have diabetes. This is usually performed 6-13 weeks after your baby is born. Ask your healthcare team how this is arranged. Your healthcare team will also give you information about changing your lifestyle, including diet, exercise and weight control. You are at risk of having diabetes in pregnancy again and you should be offered a test for diabetes when planning a future pregnancy. You should have test for diabetes every 12 months. You should discuss this with your GP/Practice nurse who can organise this for you. It is important to contact your community midwife or diabetes/antenatal team as soon as you find out you are pregnant again, as you will be offered either home blood glucose monitoring or an oral glucose tolerance (OGTT) test early in the your next pregnancy.

#### Pre-existing diabetes

If you previously had diabetes, you can go back to your usual treatment once your baby is born. If you use insulin you should reduce the amount of insulin, and monitor your blood glucose levels carefully until you are taking the correct dose of insulin. If you plan to breastfeed your baby, discuss any treatments before you start to take them. You should go back and see the person who usually monitors your diabetes treatments e.g. GP or hospital clinic.

### Care of your baby

#### Hypoglycaemia

Some babies born to mothers with diabetes may have low blood glucose levels for a few days after they are born. This is more likely if your blood glucose levels have not been easy to control. You should start feeding your baby as soon as possible after birth (within 30 minutes). Your baby should have his/her blood glucose level tested, using a special hospital test, 2-4 hours after birth to make sure it is not too low. If the blood glucose level is low, he/she will need careful monitoring and may need extra feeds. Sometimes babies are moved to the transitional care/special care baby unit/neonatal unit for closer monitoring. This does not mean your baby has diabetes. Your baby should be monitored in hospital for at least 24 hours following birth, to make sure that your baby is feeding well and his/her blood glucose levels are stable.

#### Jaundice (yellow colour)

This is a common condition in newborn babies. Babies develop a yellow colour to their skin and whites of their eyes (sclera). It is a normal process and does no harm in most cases. However, it is particularly important to check your baby for jaundice during the first week of life. If your baby becomes very sleepy with dark urine, pale/chalky stools; a blood test from the baby may be required to check the level of jaundice (bilirubin). If the level is high, treatment is recommended by using phototherapy. This is done in the hospital environment under close supervision. Treatment may last for several days, with regular blood tests being carried out to check the level of bilirubin. You will be advised according to your individual circumstances.

#### Infant feeding

Breast feeding is best for babies. Your specialist team will support you if you wish to breastfeed. If you continue to take insulin, you may need lower your doses. Hypo's are more common when breast feeding so increase 40-50grams of carbohydrates daily. Eat regular meals, monitor your blood glucose levels more regularly, carry blood glucose monitoring equipment and hypo treatment. Insulin is safe to take if you are breast feeding. Some tablets for diabetes and other medical conditions should not be started until you have stopped breastfeeding. Discuss your options with your specialist team.

### Planning your next pregnancy

Contact your GP/Practice nurse/diabetes team as soon as you start thinking about having another baby, before you stop taking contraception. Good diabetes control will help prevent problems for you and your baby in your next pregnancy.

Things to do before you get pregnant are:-

Stop smoking; reduce alcohol intake; use effective contraception; start folic acid 5mgs daily (from GP); eat healthily; be an ideal weight for your height; review your medication with your healthcare team; and have regular follow up with your diabetes team.



# Management plans

## Intrapartum

Details

Target capillary blood glucose levels for labour -

4-7 mmol/l.

Commence intravenous dextrose and variable rate IV

insulin infusion if blood glucose is not maintained between

4-7 mmol/l.

Variable intravenous insulin infusion as per

Trust guideline.

### Variable rate intravenous insulin infusion

Blood glucose	Insulin rate/hour (mls/h)
0 - 4	
4.1 - 6	
6.1 - 8	
8.1 - 10	
10.1 - 12	
12.1 +	

For glucose < 4.0 mmol/l stop infusion for 15 minutes and treat hypoglycaemia, preferably orally, or 50 mls glucose 20%, or by temporarily increasing the glucose 5% infusion rate by 50 mls/hour, re-check blood glucose in 30 minutes.

Wishes to breastfeed Yes  No

Date 2 8 0 5 1 5

Signature\* J Jones

## Pre-existing diabetes - post birth plan

BF = Breakfast; L = Lunch; E = Evening; BT = Bedtime

Insulin - dose in units, OHA's and other medication

BF L E BT Signed\*

Insulin - dose in units, OHA's and other medication	BF	L	E	BT	Signed*

Comments

## Gestational diabetes - post birth plan

### Stop insulin immediately after the birth

Mother to continue recording blood glucose levels: Yes  No

Need for fasting blood glucose or HBA1c: Discussed  Arranged

Date of postnatal appointment with specialist team 1 5 1 0 1 5

Frequency

QDS

\*Target ranges

4-7 mmol/l

Where

Diabetes clinic

Time

1 0 0 0

\*NB if blood glucose levels are above target ranges - please review local Trust policy for subsequent management plan

Date 2 8 0 5 1 5

Signature\* J Jones

OHA's = Oral Hypoglycaemic Agents

\* Signatures must be listed on page 1 for identification

Name Hannah Evans

Unit No/ NHS No A 1 2 3 4 5 6

# Home blood glucose monitoring diary

Date of first entry       Gestation week+day  +

You may find the following pages useful to record your blood glucose test results on, alternatively you can continue to use your home monitoring diary. Use one line per day and enter the result in the box beside the correct date and time. Your specialist team will set agreed blood glucose targets which you may wish to record in the boxes below.

My blood glucose targets: before meals  after meals

Day of Month	Blood Glucose level						Insulin dose in units				Comments **	
	Before BF	After BF	Before L	After L	Before EM	After EM	Before BT	BF	L	E		BT
18.05					4.9	6.8						
19.05	5.4	6.2		6.9		5.7	4.0					
20.05	5.9	7.9		8.4		9.0						
21.05	4.9	8.0		9.0		9.4						
22.05	5.2	8.1		9.1		9.2						
23.05	6.0	8.4		7.2		8.3						
24.05	6.1	9.1		10.1		7.6						
25.05	5.9	9.8		9.4		8.9						
26.05	6.8	10.0		9.0		10.2						
27.05	6.4	8.2		8.3		10.7						
28.05	6.4	8.4		8.7		10.0	16		24			<i>started insulin</i>
29.05	5.2	6.4		7.0		9.0						
30.05	5.6	6.8		7.8		8.2						
31.05	5.0	5.9		6.9		8.1						
01.06	4.9	8.4		7.1		8.6						
02.06	5.2	8.9		7.8		9.0						
03.06	4.8	7.8		8.1		9.1						
04.06	6.0	7.0		8.6		8.2	16		28			<i>Telephone contact DSM</i>
05.06	5.9	7.9		8.0		8.4						
06.06	5.8	8.0		7.6		8.0						
07.06	6.1	7.4		7.9		8.4						
08.06	6.2	6.8		7.2		8.3						
09.06	6.0	6.6		7.4		8.2						
10.06	5.9	6.0		7.0		9.0						
11.06	6.4	6.7		7.4		9.4	16		32			<i>Seen in clinic</i>
12.06	6.0	6.1		7.0		8.6						
13.06	5.9	5.9		7.2		8.1						
14.06	5.9	6.4		7.8		8.4						
15.06	5.5	6.0		7.1		8.0						
16.06	5.1	6.4		8.0		7.4						
17.06	6.2	8.0		8.9		8.9						
18.06	6.4	8.5		9.1		10.1	16		36			<i>telephone contact DSM</i>
19.06	6.6	8.6		9.4		9.8	18		36			
20.06	6.0	7.1		7.6		8.1						
21.06	5.4	6.2		7.0		7.5						

BF = Breakfast; L = Lunch; EM = Evening Meal; E = Evening; BT = Bedtime

\*\* Comments, reactions, medication, illness, diet etc

Day of Month	Blood Glucose level						Insulin dose in units				Comments **	
	Before BF	After BF	Before L	After L	Before EM	After EM	Before BT	BF	L	E		BT
22.06	5.9	6.1		7.0		6.9		18		36		
23.06	5.0	6.4		6.9		7.4						
24.06	6.0	7.1		7.2		7.0						
25.06	5.6	7.0		6.7		7.7						
26.06	5.5	6.4		6.8		7.0						
27.06	5.7	6.2		6.1		7.4						
28.06	5.9	6.8		6.9		7.4						
29.06	6.9	8.1		7.9		8.9						
30.06	6.4	9.0		9.4		9.4						
01.07	6.6	8.6		9.0		8.1						
02.07	5.9	6.8		7.4		8.0		18		40		<i>seen in clinic and seen dietitian</i>
03.07	5.4	6.4		7.8		6.9		22		40		
04.07	5.9	7.0		6.9		7.4						
05.07	5.1	5.9		6.0		7.8						
06.07	5.2	6.4		7.1		7.9						
07.07	6.1	7.2		7.8		8.6						
08.07	6.2	7.1		6.8		8.9						
09.07	6.4	7.0		6.9		9.1		22		44		<i>telephone contact DSM</i>
10.07	6.3	6.8		6.7		9.4						
11.07	6.0	7.0		7.4		8.6						
12.07	6.1	7.2		8.0		8.0						
13.07	6.0	7.4		7.9		8.5						
14.07	6.1	7.0		7.2		8.2						
15.07	6.0	6.9		7.0		8.5						
16.07	6.1	7.0		7.4		8.7		22		44		
17.07	6.0	7.2		6.8		8.4		12	12	20	22	<i>Seen in ANC - insulin changes</i>
18.07	5.2	7.0		7.8		8.0						<i>Novorapid with meals</i>
19.07	5.1	6.8		7.6		7.9						<i>Insulatard bedtime</i>
20.07	5.0	5.9		7.2		7.4						
21.07	5.7	6.1		7.0		7.0						
22.07	5.6	6.4		7.8		7.6						
23.07	5.4	6.0		6.8		7.8						
24.07	5.1	5.9		7.2		6.9						
25.07	5.6	6.2		7.6		7.0						
26.07	5.1	6.4		7.8		8.8						
27.07	5.9	6.8		8.4		9.0						
28.07	5.0	6.0		8.6		9.1						
29.07	5.6	5.9		8.9		9.0		12	14	24	24	<i>seen in ANC doses increased</i>
30.07	5.1	6.1		8.0		7.9						
31.07	5.6	6.2		7.6		6.8						
01.08	5.6	5.9		7.4		6.9						
02.08	5.5	5.9		7.3		6.8						

BF = Breakfast; L = Lunch; EM = Evening Meal; E = Evening; BT = Bedtime

\*\* Comments, reactions, medication, illness, diet etc

Name	Hannah Evans									
Unit No/	A	1	2	3	4	5	6			
NHS No										

Day of Month	Blood Glucose level							Insulin dose in units				Comments **
	Before BF	After BF	Before L	After L	Before EM	After EM	Before BT	BF	L	E	BT	
03.08	6.0	7.0		7.3		6.8						
04.08	5.1	6.0		7.8		7.9						
05.08	5.4	6.2		6.0		8.2						
06.08	5.7	8.0		7.9		8.4		12	16	26	24	telephone discussion DSM
07.08	5.0	6.1		8.1		8.0						
08.08	4.8	7.0		8.4		8.9						
09.08	5.1	6.9		7.6		7.9						
10.08	5.0	7.9		7.5		7.6						
11.08	4.8	8.0		7.6		7.0						
12.08	4.3	8.6		8.6		9.6						
13.08	4.6	8.9		8.9		9.8						Seen in ANC doses altered
14.08	5.0	8.1		8.4		8.0		14	18	28	24	
15.08	5.9	7.9		7.9		8.1						
16.08	5.7	8.1		8.0		8.6						
17.08	5.2	7.6		7.4		7.9						
18.08	5.0	6.0		7.1		7.0						
19.08	4.8	6.9		6.8		7.2						
20.08	4.9	7.0		7.1		7.4						
21.08	5.6	6.8		7.4		6.9						telephone call DSM
22.08	5.9	6.4		7.0		7.2						
23.08	4.3	5.9		7.4		7.1						
24.08	4.8	5.2		7.4		7.9						
25.08	4.9	5.5		7.2		7.0						
26.08	4.4	5.3		7.5		7.8						
27.08	5.1	5.6		7.5		7.3						
28.08	4.8	5.4		6.9								

BF = Breakfast; L = Lunch; EM = Evening Meal; E = Evening; BT = Bedtime

\*\* Comments, reactions, medication, illness, diet etc



Day of Month	Blood Glucose level							Insulin dose in units				Comments **
	Before BF	After BF	Before L	After L	Before EM	After EM	Before BT	BF	L	E	BT	

BF = Breakfast; L = Lunch; EM = Evening Meal; E = Evening; BT = Bedtime

\*\* Comments, reactions, medication, illness, diet etc

Name													
Unit No/ NHS No													

Day of Month	Blood Glucose level							Insulin dose in units				Comments **
	Before BF	After BF	Before L	After L	Before EM	After EM	Before BT	BF	L	E	BT	

Day of Month	Blood Glucose level							Insulin dose in units				Comments **
	Before BF	After BF	Before L	After L	Before EM	After EM	Before BT	BF	L	E	BT	

BF = Breakfast; L = Lunch; EM = Evening Meal; E = Evening; BT = Bedtime

\*\* Comments, reactions, medication, illness, diet etc

Name								
Unit No/ NHS No								

## Birth summary

Birth order	Date of Birth	Gestation	Mode of Delivery	Sex	Outcome	Birth weight (g)	Centile	Method of Feeding	NICU/SCU LNU/TC	Complications e.g congenital anomaly
1	2 9 0 8 1 5	39+1	NVD	F	live	3300g	79	breast	No	None
2	D D M M Y Y									

## Postnatal follow-up visit

Date  Blood pressure  Urinalysis  Maternal weight  Method of feeding

**Details:** including ophthalmic follow-up if required

*Revised in post natal GDM clinic. Advise given re exercise; diet; future pregnancies and risk of diabetes in later life.*

Signature\*

## Postnatal fasting blood glucose/HbA1c

Date of test  Weeks post delivery  Fasting glucose  HbA1c

mmol/l

## Postnatal management plan

Care provider should sign, following discussion with mother

All	Discussed	Further comments
Contraception discussed, advice given	<input checked="" type="checkbox"/>	<i>Contact numbers given for diabetes team - to contact team as soon as next pregnancy confirmed.</i>
Preconception care next pregnancy	<input checked="" type="checkbox"/>	
<b>Normal fasting blood glucose/HbA1c</b>		
Annual fasting glucose recommended	<input checked="" type="checkbox"/>	
Prevention of diabetes through diet, exercise and weight control	<input checked="" type="checkbox"/>	
Risk of diabetes in future pregnancies	<input checked="" type="checkbox"/>	
<b>Pre-existing or newly diagnosed</b>		
Next appointment: GP <input type="checkbox"/> Diabetes clinic <input type="checkbox"/> Other <input type="checkbox"/>		

Date  Signature\*

## Current treatment

BF = Breakfast; L = Lunch; E = Evening; BT = Bedtime

Insulin in units and other medication	BF	L	E	BT	Signed

**Comments**

*Discharged to primary care team.*

Date  Signature\*

NICU = Neonatal Intensive Care Unit; SCU = Special Care Unit, LNU = Local Neonatal Unit, TC = Transitional Care