The Shrewsbury and Telford Hospital NHS Trust

Gestational Diabetes - Screening

Version 7.2

Lead Persons: Obstetric Diabetes Lead Consultant
Care Group: Women & Children's
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Written by: Guy Calcott, Consultant
Consultation: Specialist Diabetes Midwives
Dr David Barton, Consultant Endocrinologist.
Dr Anna Green – Consultant Endocrinologist
ALSO REFER TO GLUCOSE TOLERANCE TEST SOP

Version	Implementation date	History	Ratified by	Full review date
1	June 2010	New guideline	MGG Maternity governance	June 2013
2	21st February 2011	Minor amendment	MGG	February 2014
3	24th May 2011	Minor amendment	MGG	May 2014
4	30th September 2014	Full Review Revision due to reconfiguration	Extraordinary Approval	September, 2017
4.1	5th November 2015	Revision to fasting glucose values within definitions as per NICE guidance issued 2015	GC Authorised	September 2017
4.2	19th November 2015	Addition of current process for GTT appointments	Extraordinary Approval	September 2017
5.0-5.4	3rd May 2016-3rd July 2018	Amalgamation of history/version control front sheet table. Refer to version *6.0* for full history of revisions	MGG Maternity Governance	May 2019
6	5th August 2019	Full Review	MGG Maternity Governance	July 2024
6.1	6th December 2019	Revision to section 5.3 repeat testing and section 5.4 late gestation screening	MGG Maternity Governance	July 2024
6.2	9th April 2020	Temporary suspension refer to SOP 076	Maternity Governance	July 2024
7	20th October 2023	Re-instatement of GTT and update	Maternity Governance	October 2026
7.1	27th October 2023	Minor amendment to appendix 2 to include sentence Only screen up until 37+6 weeks.		**October 2026**

7.2	3rd November 2025	Updated Clinical Referral Process	Maternity Governance	**October 2026**

1.0 Introduction

In this guideline we use the terms 'woman' or 'mother' throughout. These should be taken to include people who do not identify as women but are pregnant or have given birth'.

1.1 Gestational diabetes mellitus (GDM) is carbohydrate intolerance resulting in hyperglycaemia of variable severity with onset or first recognition during pregnancy.

1.2 Identification of risk factors for developing GDM is recommended at the initial booking appointment (NICE 2015).

1.3 Women with any risk factor for gestational diabetes identified at booking will be offered testing for gestational diabetes between 24 and 28 weeks gestation or earlier if necessary (NICE 2015). Women who have had previous GDM will be offered screening for GDM as soon as possible after booking.

1.4 This guideline should be read in conjunction with the maternity guideline Diabetes Pre-existing and Gestational (Antenatal, Intrapartum and Postnatal Care).

2.0 Aim

Detection of gestational diabetes in affected pregnant women in order to manage antenatal and intrapartum care to improve pregnancy outcomes.

3.0 Objectives

3.1 To identify women at risk of gestational diabetes and offer an appropriate screening test at the correct gestation.
3.2 To ensure that women with a positive screening test are referred to the combined obstetric/diabetes team
3.4 To clarify why, when and how women should be screened late in pregnancy.

4.0 Definitions/Abbreviations

AC	Abdominal Circumference
ANC RSH	Antenatal Clinic, RSH site
ANC PRH	Antenatal Clinic, PRH site
DVP	Deepest Vertical Pool
DSM	Diabetes Specialist Midwife
EFW	Estimated Fetal Weight
GDM	Gestational Diabetes
GTT	Glucose tolerance test - The 75 g Oral GTT.
HbA1c	Glycated haemoglobin
IOL	Induction of Labour
LGA	Large for Gestational Age
RBG	Random blood Glucose

5.0 Process

5.1 Risk assessment at booking

Risk factors for the development of diabetes will be identified by the Community Midwife at the booking appointment. Following this, women will be separated into

women who will have routine screening at 24-28 weeks, and those who require early screening as soon as possible after booking (aiming by 16 weeks).

Criteria for Routine Screening

Women with any one of the following risk factors should be referred for diabetes screening at 24-28 weeks by the community midwife, using the referral form on Badgernet. The method of screening will be determined by the diabetes team (section 5.3)

- BMI ≥ 30
- First degree relative of the woman (parent, sibling or child) with diabetes
- Previous baby with birth weight ≥ 4.5 kg
- Family origin with high prevalence of diabetes
  - South Asian (India, Pakistan or Bangladesh)
  - Black Caribbean
  - Middle Eastern (Saudi Arabia, United Arab Emirates, Iraq, Jordan, Syria, Oman, Qatar, Kuwait, Lebanon and Egypt)
- Maternal age ≥ 40 years
- Polycystic Ovary Syndrome
- Antipsychotic medication in current pregnancy (e.g. clozapine, risperidone, haloperidol)

Criteria for Early Screening

Women with the following risk factors should be referred by the Community Midwife for diabetes screening to be completed by 16 weeks. If normal this will be repeated at 24-28 weeks. Screening may be via OGTT or commencing glucose monitoring:

- GDM in a previous pregnancy
- History of Impaired glucose tolerance (Pre-Diabetes) prior to conception
- Glycosuria 2+ at booking

5.2 Factors arising during pregnancy

In addition to the above risk factors, the following criteria should also prompt investigation for gestational diabetes in women who have had not had routine screening, OR women who are over 4 weeks from a previously normal screening test:

- Glycosuria
  - 1+ on two or more occasions
  - 2+ on one occasion
- Suspected Macrosomic fetus on ultrasound scan (Non-customised/Hadlock)
  - EFW ≥ 95th centile on hadlock (scan) chart **OR**
  - EFW >90th centile AND AC > 95th centile on hadlock (scan) chart **OR**
  - EFW >90th centile AND Polyhydramnios on ultrasound scan with DVP >8cm
- Isolated polyhydramnios with DVP >10cm
- Clinical suspicion of diabetes including polyuria, polydipsia

5.3 Methods of Screening

- **Glucose Tolerance Test**

  GTT should be the primary method of screening for most women up until 34 weeks of gestation. A GTT should not be used for women who have had bariatric surgery.

  Diagnose gestational diabetes using a 75g oral GTT if the woman has either:

  - a fasting plasma glucose level of 5.6 mmol/litre or above or
  - a 2 hour plasma glucose level of 7.8 mmol/litre or above.

  GTT is not validated in the later third trimester.

- **Blood Glucose Monitoring (Week of Testing)**

  - Women who do not tolerate GTT, and women who have had bariatric surgery will be asked to monitor sugars 4 times daily for one week (Fasting, 1 hour post breakfast, lunch and dinner).
  - Diagnose gestational diabetes when there are 3 or more readings above the normal range in seven days.

  NOTE: a Week of Testing may be used as an alternative screening test when a timely OGTT is not available due to capacity.

- **HbA1c and Random Glucose**
  - HbA1c and random glucose should not be used as the primary screening tool for gestational diabetes (NICE 2015)
  - During the covid-19 pandemic the RCOG produced guidance on using HbA1c and random glucose as an alternative method when GTT is not suitable
  - This will be the primary method of testing for diabetes in late gestation from 34+0 weeks.
  - Diagnose Gestational diabetes when:
    - HbA1c ≥ 39mmol/mol
    - RBG > 9.0

5.4 Repeat Screening under 34 weeks

When one of the above criteria (section 5.2) arises, and the woman has had a normal GTT within 4 weeks no further action is needed. If more than four weeks has passed since the GTT and the gestation is still < 34+0 weeks of gestation then a referral should be made for a repeat GTT. No more than two GTTs will be routinely offered during the pregnancy.

5.5 Screening from 34-37+6 weeks

There is no clear evidence that provides a clear way to diagnose gestational diabetes in the late third trimester. Insulin resistance increases in late gestation, and therefore the conventional tests are likely to be less accurate.

From 34+0 weeks testing for gestational diabetes will be done using Hba1c and RBG. If the result is consistent with gestational diabetes the woman should be

referred to the diabetes midwife to commence glucose monitoring and will be offered an appointment in the diabetes antenatal clinic to review the results

Suspected macrosomia after 38+0 weeks

After 38+0 weeks no testing for diabetes should be done based on suspected macrosomia alone. Women should be referred for an appointment in the emergency ANC and IOL considered as per routine practice. If the woman declines induction of labour, or the emergency clinic team are suspicious for gestational diabetes, they may send an HbA1c and RBG. If the baby is confirmed to be macrosomic at birth (birthweight ≥95th centile) and NO test for diabetes has been done, then gestational diabetes will be retrospectively suspected. It should be recommended that the baby have blood sugar monitoring for the first 12 hours after birth, and the woman have an HbA1c 13 weeks after birth with her GP.

5.6 Process for referral for GTT

5.6.1 Risk factors identified at antenatal booking

See **Appendix 1** for the process.

The need for referral should be explained and the woman give consent. The completed referral form is sent via Badgernet to the GTT referral pathway where an appointment will be arranged and posted to the woman.

If the woman declines screening, this will be indicated on the referral form and sent to the Diabetes pathway via Badgernet.

To help women make an informed decision about risk assessment and testing for gestational diabetes, explain that:

- some women find that gestational diabetes can be controlled with changes in diet and exercise
- most women with gestational diabetes will need oral blood glucose lowering agents or insulin
- if gestational diabetes is not detected and controlled, there is a small increase in the risk of serious adverse birth complications such as shoulder dystocia
- women with gestational diabetes will need more monitoring, and may need more interventions during pregnancy and labour.

5.6.2 Risk factors developing in pregnancy

Women presenting with recurrent or significant glycosuria under 34 weeks (see section 5.2) will be offered a GTT within 2 weeks. Referral form to be sent via Badgernet using the Diabetes pathway NOT GTT pathway

OR

Call the Diabetes Team directly to book an urgent GTT. EXT 5774 PRH

Women with fetal ultrasound criteria associated with GDM will be referred to the antenatal clinic midwives who will arrange a GTT /HbA1c + RBG as appropriate depending on gestation.

5.7 Missed appointments for GTT

Women who do not attend the GTT appointment will be contacted by the midwife in ANC PRH/RSH and offered a further appointment. When a woman fails to attend

two appointments, it will be documented on Badgernet. Community midwife will be informed. If patient requests further appointment, please contact ANC.

5.8 **Accessing Results**

The results of all GTT and Week of testing will be reviewed by the diabetes midwifery team and the result uploaded onto Badgernet. The woman will only be contacted if she has an abnormal result. The community midwife also should confirm the result of the test at the next appointment.

For women in later pregnancy (after 34 weeks) who have HbA1c/RBG, the team responsible for requesting the test (Antenatal clinic or community midwife) will be expected to check and act on any abnormal results. Women with abnormal results after an HbA1c or RBG should be referred to the diabetes midwives via telephone/email as above.

5.9 **Management following an abnormal GTT result**

The DSM is responsible for co-ordinating the management and plan of care in accordance with the guideline for antenatal care for women with pre-existing and gestational diabetes – see Diabetes Pre-existing and Gestational (Antenatal, Intrapartum and Postnatal Care).

6.0 Training

Please refer to the Training Needs Analysis. Maternity staff will attend a diabetes update on the mandatory training day.

7.0 Monitoring / standards

"Compliance with this guideline / SOP will be audited as part of the Shrewsbury and Telford Hospital NHS Trust's five-year rolling programme of NICE and local guideline audits, unless circumstances require an earlier or more frequent audit. The audit will be carried out using the auditable standards and the results will be reported and acted on in accordance with the Trust Clinical Audit Policy (CG25)".

8.0 References

Heinonen E, Forsberg L, Nörby U, Wide K, Källén K. Antipsychotic Use During Pregnancy and Risk for Gestational Diabetes: A National Register-Based Cohort Study in Sweden. CNS Drugs. 2022 May;36(5):529-539. doi: 10.1007/s40263-022-00908-2. Epub 2022 Feb 26. PMID: 35220525; PMCID: PMC9095513.

Laine, MK, Kautiainen, H, Gissler, M, Raina, M, Aahos, I, Järvinen, K, et al. Gestational diabetes in primiparous women–impact of age and adiposity: a register-based cohort study. Acta Obstet Gynecol Scand 2018; 97: 187–194.

NICE NG3 (2020) Diabetes in pregnancy: management of diabetes and its complications from preconception to the postnatal period. NICE clinical guideline. National Institute for Health and Clinical Excellence.

RCOG (2020): Guidance for maternal medicine services in the coronavirus (COVID-19) pandemic, December 2020

Appendix 1

Process for the referral of women for GTT

GTT Offered

GTT **offer** documented on Badgernet at booking appointment.

- Woman booked by Midwife
- Midwife identifies that the woman needs GTT
- 'Referral for GTT' form completed
- Referral form sent via Badgernet
- If women declines GTT this is indicated on the form and sent to Diabetes pathway.

- Diabetic Team receives 'Referral for GTT' form
- EDD and pregnancy ongoing checked by WSA
- Appropriate appointment(s) scheduled
- Appointments put on Booking system
- Referral form filed in month order in ANC GTT Folder
- Appointment letter generated through Booking System and sent with GTT information leaflet to the woman (following USS confirming viability and gestation).

Opportunity to check GTT Appointment arranged

If they attend Antenatal Clinic – Antenatal Clinic Midwife checks During 16-week appointment if early GDM screening was required.

Recheck early third trimester if woman has received appointment for GTT

Automated text reminder sent out to woman regarding the appointment

- Woman attends her GTT appointment
- GTT checked and result documented on Badgernet by diabetes/clinic team.
- Attends appointment as documented on booking system

Results are available on review within 24 hours.

- Woman DNA's her GTT appointment.
- WSA contacts the woman and offers another appointment
- Appointment put on Booking System
- **See section 5.6 of the guideline for DNAs**

Appendix 2

Diabetes Screening – Quick reference table

	Booking to 23+6 weeks	24 to 33+6 weeks	34 weeks to delivery
Glycosuria 1+ on 2 occasions 2+ or more on one occasion	**GTT within 1-2 weeks**	**GTT within 1-2 weeks**	**Hba1c and RBG immediately. Diagnosis made on Hba1c 39 or above, or RBG 9 or above**
EFW > 95th centile hadlock chart on ultrasound scan EFW >90th centile on Hadlock chart AND AC >95th centile EFW >90th centile (Hadlock) and polyhydramnios (DVP>8cm)	**N/A**	**GTT within 1-2 weeks**	**Hba1c and RBG immediately. Diagnosis made on Hba1c 39 or above, or RBG 9 or above Only screen up until 37+6 weeks.**
Polyhydramnios with DVP >10cm alone	**GTT within 1-2 weeks**	**GTT within 1-2 weeks**	**Hba1c and RBG immediately. Diagnosis made on Hba1c 39 or above, or RBG 9 or above**
Extreme thirst or any other clinical suspicion – Polyuria, Polydipsia (See below)	**GTT within 1-2 weeks**	**GTT within 1-2 weeks**	**Hba1c and RBG immediately. Diagnosis made on Hba1c 39 or above, or RBG 9 or above**

NOTE: Patients with clinical symptoms suggestive of diabetes such as excessive thirst, polydipsia, polyuria or weight loss must have a capillary blood glucose and a capillary blood ketone test checked. If both are normal proceed to screen as above. If any is abnormal (Random glucose >11mmol/L, or blood ketone > 1.5mmol/L) urgent medical review is required and the woman should be referred to the emergency department or on call medical team as appropriate.

Appendix 3

Exemption paper.

NICE states:

Do not use fasting plasma glucose, random blood glucose, HbA1c, glucose challenge test or urinalysis for glucose to assess the risk of developing gestational diabetes (2015).

Since the Royal College of Obstetricians and Gynaecologists produced a temporary guidance for screening for GDM during Covid (Dec 2020), we have continued to use Hba1c and RBG as a screening tool with diagnostic values of HbA1c being 39 mmol/mol and Random Blood Glucose levels of 9 mmol/l.

HbA1c can underestimate maternal glycaemia in mid-late gestation, especially in women with lower haemoglobin levels. The lowered threshold for diabetes (39) was adopted by RCOG in view of this.

We have found using Hba1c and RBG especially useful in later gestation, eg after 34 weeks, hence this guideline continues to support the use of Hba1c and RBG during late pregnancy as described during the covid-19 pandemic.

There is no national standard that clearly defines the criteria for or method of screening for women in late gestation who are suspected to have gestational diabetes. Women should be informed of this, as well as the limitations of the tests available.