GESTATIONAL DIABETES MELLITUS AND SUBSEQUENT MANAGEMENT OF CONFIRMED GESTATIONAL DIABETES MELLITUS (GDM) AND SELECTIVE SCREENING - CLINICAL GUIDELINE

V 1.5 2017
1. **Aim/Purpose of this Guideline**
1.1. To provide community and hospital based midwives, maternity support workers and Obstetricians with guidance on the screening and subsequent management of pregnant women in relation to gestational diabetes mellitus (GDM).

2. **The Guidance**
2.1. **Women with the following risk factors should be offered an oral glucose tolerance test (OGTT) to test for gestational diabetes at 26 weeks.¹**

   - BMI above 30 kgs/m²
   - Previous macrosomic baby weighing 4.5 kgs or above
   - First degree relative (parents/siblings) with diabetes - Type 1 and 2
   - **Family origin with a high prevalence of diabetes e.g. South Asian, Black Caribbean and Middle-Eastern**
   - Confirmed polycystic ovarian syndrome (PCOS) especially if treated with Metformin
   - Previous unexplained still birth
     GTT should also be performed for :
   - Confirmed polyhydramnios or fetal macrosomia **(at any gestational age)**
   - Glycosuria of 2+ or above on 1 occasion or of 1+ or above on 2 or more occasions. (New 2016)
   - Women who have had gastric bypass surgery (excluding gastric band) should not have a OGTT. Instead advise testing capillary blood glucose levels for one week at 26 weeks refer to Diabetes Specialist Midwives to arrange. **(New 2016)**

2.2. So that women can make an informed decision about risk assessment and testing for gestational diabetes, explain that:
   - In some women, gestational diabetes will respond to changes in diet and exercise
• The majority of women will need oral blood glucose-lowering agents or insulin therapy if changes in diet and exercise do not control gestational diabetes effectively.

• If gestational diabetes is not detected and controlled, there is a small increased risk of serious adverse birth complications such as shoulder dystocia.

• A diagnosis of gestational diabetes will lead to increased monitoring, and may lead to increased interventions, which may include insulin administration during both pregnancy and labour.

• A record of this discussion and her decision accordingly, needs to be documented in the woman’s notes and written information given to her.

2.3. **Glucose Tolerance Test:** (OGTT)
   The ‘gold standard’ diagnostic test for GDM is the 75g oral glucose tolerance test (OGTT) conducted at 24-28 weeks of gestation. (Aim for 26 weeks)

2.4. **Procedure for the OGTT Test**
   • The test should be performed in the morning following an overnight fast, (min 8 hours). The woman should refrain from smoking.
   • A blood sample is taken for measurement of fasting glucose before the test is undertaken.
   • A glucose load equivalent to 75grams of anhydrous glucose (Polycal 113mls) mixed with water to give a total fluid volume of 250-300mls.
   • The glucose should be consumed over a 5 minute period (timing of the test starts at the beginning of ingestion). There should be no smoking or exercise throughout the duration of the test.
   • A further blood sample is collected 2 hours after the glucose load for a further measurement of the glucose concentration.

2.5. **Interpretation of Results**

<table>
<thead>
<tr>
<th></th>
<th>Fasting glucose</th>
<th>120 min</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Normal</strong></td>
<td>&lt;5.6 mmol/l</td>
<td>&lt; 7.8 mmol/l</td>
</tr>
<tr>
<td><strong>Gestational Diabetes</strong></td>
<td>≥5.6 mmol/l</td>
<td>≥7.8 mmol/l</td>
</tr>
</tbody>
</table>

The community midwife ordering the test is responsible for checking the results and making the referral.
2.6. **Women with a previous history of gestational diabetes**

All women with previous GDM should be offered a OGTT as soon as possible after booking and a further OGTT at 26 weeks. *(New 2016)*

2.7. **Subsequent management of women with Gestational Diabetes Mellitus**

- Any women whose OGTT has fallen within the range for gestational diabetes should be notified to the Diabetes Specialist Midwives.
- An appointment to commence self-monitoring of capillary blood glucose (CBG) levels will be arranged and advice to maintain capillary CBG within normal range ie fasting of < 5.3 mmol, 1 hour post meals of < 7.8 mmol will be given.
- A blood test to determine glycosylated haemoglobin (HbA1c – purple tube sent to clinical chemistry) will be checked in all women with GDM at diagnosis to identify those who may already have Type 2 DM.
- Offer women with a diagnosis of GDM a review with the joint diabetes and antenatal clinic within 1 week.
- Fetal growth and liquor volume scans will be arranged at 28, 32 and 36 weeks.
- Inform the primary healthcare team when a woman is diagnosed with GDM (a letter will be sent to the GP, informing of diagnosis). *(New 2016)*

2.8 **Particular information that will be given to the woman is as follows:**

- The role of diet, body weight and exercise (such as walking for 30 minutes after a meal). In particular emphasise that foods with a low glycaemic index should replace those with a high glycaemic index
- Advise that as well as changes in diet and exercise, tablets and or insulin may be required.
- If blood glucose targets are not met using changes in diet and exercise within 1–2 weeks metformin will be offered.
- If metformin is contraindicated or unacceptable to the woman, insulin instead of metformin will be offered.
- If blood glucose targets are not met insulin will be offered in addition to the treatments of changes in diet, exercise and metformin.
- If the fasting plasma glucose level is 7.0 mmol/litre or above at diagnosis, along with changes in diet and exercise, immediate treatment with insulin, with or without metformin may be offered.
- Consider immediate treatment with insulin, with or without metformin, as well as changes in diet and exercise, for women with GDM who have a fasting plasma glucose level of between 6.0 and 6.9 mmol/litre if there are complications such as macrosomia or polyhydramnios.
- Advise pregnant women with GDM who are on a multiple daily insulin injection regimen to test their fasting, pre-meal, 1-hour post meal and bedtime blood glucose levels daily.
- Advise pregnant women with GDM to test their fasting and 1-hour post-meal blood glucose levels daily during pregnancy if they are: on diet and exercise therapy or taking oral therapy or single dose intermediate-acting or long-acting insulin.
- Consider glibenclamide for women with GDM: in whom blood glucose targets are not achieved with metformin but who decline insulin therapy or who cannot tolerate metformin.

2.9 Women will be informed that good blood glucose control throughout pregnancy will reduce the risk of:
- Fetal macrosomia, trauma during birth (for her and her baby), induction of labour and/or caesarean section, neonatal hypoglycaemia and perinatal death
- The risk of the baby developing obesity and/or diabetes in later life

2.10 Additional advice offered: -
- Increased risk of developing Type 2 DM in the future
- To give birth in hospitals where advanced neonatal resuscitation skills are available 24 hours a day.
- Not to be discharged home until the baby is at least 24 hours old, ensuring that the baby is maintaining blood glucose levels and is feeding well.

2.11 Recommendations for Delivery
- Women with GDM with no complications and good control will be advised to give birth no later than 40+6 weeks, and if not given birth by this time induction of labour or CS will be offered
- If there are fetal or maternal complications, delivery before this will be offered
- Mode and timing of delivery will be discussed in the Joint diabetes ANC at 36 weeks and a discussion form will be completed.
- Antenatal hand expressing will be recommended from 36/40.

All other antenatal care for that woman should be as normal, performed by the community midwife.

2.12 Intra-partum management women with GDM
Please refer to the flow chart ‘Management of women with Diabetes in Established Labour’

2.13 Post-natal Management
- All women with GDM should discontinue blood glucose monitoring and glucose lowering treatment post delivery (unless they have been otherwise advised).
Prior to discharge to community care:

- All women with GDM should have a capillary blood glucose check using ward based meter pre meal and should be performed at least four hours post delivery.
- If < 7mmol/l no further testing required until 6/52 follow up – see below
- If 7-10mmol/l may be discharged but to continue capillary blood glucose testing at home. Inform Diabetes Specialist Midwife (ext 3199) who will follow up.
- If >10mmol/l prior to discharge the woman will need to be reviewed by the diabetic team (out of hours this will need to be the on call medical registrar) as may require long term diabetic treatment and 6/52 follow up in the Diabetes Antenatal Clinic (New 2016)

2.14 Remind women of the symptoms of hyperglycaemia (thirst and polyuria) prior to discharge and to report any symptoms to a health care provider.

- Explain to women who were diagnosed with gestational diabetes about the risks of gestational diabetes in future pregnancies, and offer them testing for diabetes
- For women who were diagnosed with gestational diabetes and whose blood glucose levels returned to normal after the birth: Offer lifestyle advice (including weight control, diet and exercise).
- Offer a fasting plasma glucose test 6–13 weeks after the birth to exclude diabetes (for practical reasons this might take place at the 6-week postnatal check). GP letter will be sent by the Diabetes Specialist Midwife to request (copied to the woman).
- If a fasting plasma glucose test has not been performed by 13 weeks, an HbA1c is recommended.
- Women should have an annual HbA1c by the GP (New 2016)

3. Monitoring compliance and effectiveness

<table>
<thead>
<tr>
<th>Element to be monitored</th>
<th>Follow up of results and referral to Diabetes Specialist Midwife</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>Diabetes Specialist Midwife</td>
</tr>
<tr>
<td>Tool</td>
<td>Compliance monitoring tool to include:</td>
</tr>
<tr>
<td></td>
<td>- GTT test performed correctly</td>
</tr>
<tr>
<td></td>
<td>- Was the woman informed of results</td>
</tr>
<tr>
<td></td>
<td>- Correct referral to Diabetes Specialist Midwife</td>
</tr>
<tr>
<td>Frequency</td>
<td>Each referral is reviewed by the Diabetes Specialist Midwife</td>
</tr>
<tr>
<td>Reporting arrangements</td>
<td>If process has not been followed correctly, the Diabetes Specialist Midwife will complete an electronic incident form (Datix).</td>
</tr>
<tr>
<td></td>
<td>The incident will be reviewed through the Maternity Risk Forum</td>
</tr>
</tbody>
</table>
4. Equality and Diversity

4.1 This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement which can be found in the 'Equality, Diversity & Human Rights Policy' or the Equality and Diversity website.

4.2 Equality Impact Assessment
The Initial Equality Impact Assessment Screening Form is at Appendix 2.
### Appendix 3. Governance Information

<table>
<thead>
<tr>
<th>Document Title</th>
<th>GESTATIONAL DIABETES MELLITUS AND SUBSEQUENT MANAGEMENT OF CONFIRMED GESTATIONAL DIABETES MELLITUS (GDM) AND SELECTIVE SCREENING - CLINICAL GUIDELINE</th>
</tr>
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<tbody>
<tr>
<td>Date Issued/Approved:</td>
<td>11&lt;sup&gt;th&lt;/sup&gt; April 2017</td>
</tr>
<tr>
<td>Date Valid From:</td>
<td>11&lt;sup&gt;th&lt;/sup&gt; April 2017</td>
</tr>
<tr>
<td>Date Valid To:</td>
<td>11&lt;sup&gt;th&lt;/sup&gt; April 2020</td>
</tr>
</tbody>
</table>
| Directorate / Department responsible (author/owner): | Helen Probert  
Diabetes Specialist Midwife  
Obs and Gynae Directorate |
| Contact details: | 01872 253199 |
| Brief summary of contents | To provide community and hospital based midwives, maternity support workers and obstetricians with guidance on the screening and subsequent management of pregnant women in relation to gestational diabetes mellitus (GDM) |
| Suggested Keywords: | Gestational, diabetes, GTT, blood sugar, blood glucose, diabetic, diabetic, BG, Polycal, Maxijul, screening |
| Target Audience | RCHT ✓  
PCH  
CFT  
KCCG |
| Executive Director responsible for Policy: | Medical Director |
| Date revised: | 6<sup>th</sup> April 2017 |
| This document replaces (exact title of previous version): | Clinical guideline for the Selective Screening for Gestational Diabetes Mellitus and Subsequent Management of Confirmed Gestational diabetes mellitus (GDM) |
| Approval route (names of committees)/consultation: | Maternity Guideline Group  
Obs and Gynae Directorate |
Divisional Manager confirming approval processes | Head of Midwifery
---|---
Name and Post Title of additional signatories | No Required
Signature of Executive Director giving approval | {Original Copy Signed}
Publication Location (refer to Policy on Policies – Approvals and Ratification): | Internet & Intranet  ✔ Intranet Only
Document Library Folder/Sub Folder | Clinical/Midwifery and obstetrics
Links to key external standards | CNST 3.9

Related Documents:
- NICE Diabetes in Pregnancy Guideline 2015 NG3

Training Need Identified? | No

Version Control Table

<table>
<thead>
<tr>
<th>Date</th>
<th>Version No</th>
<th>Summary of Changes</th>
<th>Changes Made by (Name and Job Title)</th>
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</thead>
<tbody>
<tr>
<td>Dec 2008</td>
<td>1.0</td>
<td>Initial document</td>
<td>Karen Watkins Consultant Obstetrician</td>
</tr>
<tr>
<td>Dec 2011</td>
<td>1.1</td>
<td>Updated, gestation of GTT changed to 26 weeks</td>
<td>Helen Probert Diabetes Specialist Midwife</td>
</tr>
<tr>
<td>June 2013</td>
<td>1.2</td>
<td>Change to interpretation of results only</td>
<td>Helen Probert Diabetes Specialist Midwife</td>
</tr>
<tr>
<td>6th February 2014</td>
<td>1.3</td>
<td>Change from 113mls Maxijul to 113mls Polycal.</td>
<td>Helen Probert Diabetes Specialist Midwife</td>
</tr>
</tbody>
</table>
14th June 2016  1.4  Updated in line with NICE guidelines  Helen Probert
Diabetes Specialist
Midwife

11th April 2017  1.5  Lucozade removed as no longer suitable as
glucose load equivalent to 75grams  Helen Probert
Diabetes Specialist
Midwife

All or part of this document can be released under the Freedom of
Information Act 2000

This document is to be retained for 10 years from the date of expiry.

This document is only valid on the day of printing

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Trust Policy on Document Production. It should not be altered in any way without
the express permission of the author or their Line Manager.
## Appendix 2. Initial Equality Impact Assessment Screening Form

<table>
<thead>
<tr>
<th>Name of service, strategy, policy or project (hereafter referred to as <em>policy</em>) to be assessed: GESTATIONAL DIABETES MELLITUS AND SUBSEQUENT MANAGEMENT OF CONFIRMED GESTATIONAL DIABETES MELLITUS (GDM) AND SELECTIVE SCREENING - CLINICAL GUIDELINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directorate and service area:</td>
</tr>
<tr>
<td>Name of individual completing assessment:</td>
</tr>
</tbody>
</table>

### 1. Policy Aim*
To provide community and hospital based midwives, maternity support workers and Obstetricians with guidance on the screening and subsequent management of pregnant women in relation to gestational diabetes mellitus (GDM).

### 2. Policy Objectives*
To ensure pregnant women at risk of gestational diabetes mellitus are offered screening and referred for specialist care where appropriate.

### 3. Policy – intended Outcomes*
Women with gestational diabetes mellitus are referred for specialist care.

### 1. How will you measure the outcome?
Compliance Monitoring Tool.

### 5. Who is intended to benefit from the Policy?
All pregnant women.

### 6a. Is consultation required with the workforce, equality groups, local interest groups etc. around this policy?
No

b. If yes, have these groups been consulted?
N/A

c. Please list any groups who have been consulted about this procedure.
N/A
7. The Impact
Please complete the following table.

Are there concerns that the policy could have differential impact on:

<table>
<thead>
<tr>
<th>Equality Strands:</th>
<th>Yes</th>
<th>No</th>
<th>Rationale for Assessment / Existing Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>X</td>
<td></td>
<td>All pregnant women</td>
</tr>
<tr>
<td>Sex (male, female, transgender / gender reassignment)</td>
<td>X</td>
<td>All pregnant women</td>
<td></td>
</tr>
<tr>
<td>Race / Ethnic communities /groups</td>
<td>X</td>
<td>All pregnant women</td>
<td></td>
</tr>
<tr>
<td>Disability - learning disability, physical disability, sensory impairment and mental health problems</td>
<td>X</td>
<td>All pregnant women</td>
<td></td>
</tr>
<tr>
<td>Religion / other beliefs</td>
<td>X</td>
<td>All pregnant women</td>
<td></td>
</tr>
<tr>
<td>Marriage and civil partnership</td>
<td>X</td>
<td>All pregnant women</td>
<td></td>
</tr>
<tr>
<td>Pregnancy and maternity</td>
<td>X</td>
<td>All pregnant women</td>
<td></td>
</tr>
<tr>
<td>Sexual Orientation, Bisexual, Gay, heterosexual, Lesbian</td>
<td>X</td>
<td>All pregnant women</td>
<td></td>
</tr>
</tbody>
</table>

You will need to continue to a full Equality Impact Assessment if the following have been highlighted:
- You have ticked “Yes” in any column above and
- No consultation or evidence of there being consultation - this excludes any policies which have been identified as not requiring consultation. or
- Major service redesign or development

8. Please indicate if a full equality analysis is recommended. | Yes | No |
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td></td>
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</tbody>
</table>

9. If you are not recommending a Full Impact assessment please explain why.

N/A

Signature of policy developer / lead manager / director
Helen Probert
Specialist Midwife for Diabetes

Date of completion and submission
11th April 2017

Names and signatures of members carrying out the Screening Assessment
1. Helen Probert
2.
Keep one copy and send a copy to the Human Rights, Equality and Inclusion Lead, c/o Royal Cornwall Hospitals NHS Trust, Human Resources Department, Knowledge Spa, Truro, Cornwall, TR1 3HD

A summary of the results will be published on the Trust’s web site.

Signed: Sarah-Jane Pedler

Date: 11th April 2017
SCREENING FOR GESTATIONAL DIABETES MELLITUS (GDM)

**Interpretation of Results**

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<td><strong>Gestational Diabetes</strong></td>
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<td>7.8</td>
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Gestational Diabetes Mellitus And Subsequent Management Of Confirmed Gestational Diabetes Mellitus (GDM) And Selective Screening - Clinical Guideline

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Gestational Diabetes is defined by the World health Organisation (WHO) as ‘carbohydrate intolerance resulting in hyperglycaemia of variable severity with first onset or first recognition during pregnancy’ (WHO 1999). Therefore in pregnancy any elevation of blood glucose above normal should be referred to the Diabetes Specialist Midwife, (ext. 3199) to discuss diet and exercise and to commence blood glucose monitoring. The community midwife ordering the test is responsible for checking the results and making the referral.  

1 = Gestational Diabetes please refer to Diabetes Specialist Midwives 01872 25 3199