GUIDELINE FOR THE MANAGEMENT OF OBSTETRIC WOMEN WITH BODY MASS INDEX OVER 35

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### Overview

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<td>Accountable Executive Director</td>
<td>Clinical Director for Obstetrics</td>
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<td>Author(s)</td>
<td>Consultant Obstetrician , Consultant Midwife</td>
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Management of Obstetric Patients with Body Mass Index Over 35

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## Key Points to Consider

Refer to Flowchart in Appendices

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**Raised BMI is an important risk factor in pregnancy & must be documented, with care plan.**

| BMI over 35 | • give general dietary/exercise advice; optimise BMI pre-pregnancy  
|            | • check need for large BP cuff  
|            | • consultant antenatal booking  
|            | • consider thromboprophylaxis if additional risk factors in pregnancy/postnatally; give DVT information leaflet and discuss passive exercises  
|            | • consider Aspirin 75 mg throughout pregnancy if risk factors for PET  
|            | • GTT at 26-28 weeks or earlier if other risk factors for gestational diabetes exist.  
| Intrapartum | • risk assess for thromboprophylaxis, pressure areas, involve senior staff  
|            | • promote breastfeeding  

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**Raised BMI is an important risk factor in pregnancy & must be documented, with care plan. Follow advice as above but include**

| BMI over 40 | • early anaesthetic referral (by 34 wks) to Obstetric Anaesthetic clinic – incl presence of co-morbidities  
|            | • refer to obstetric Haematology clinic for specialist thromboprophylaxis advice  
|            | • ensure safe equipment available/used  
|            | • postnatal thromboprophylaxis  

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1. Introduction

Obesity rates in the UK have approximately doubled over the past 20 years, with 27% of women aged between 16 and 24 years being overweight or obese\(^1\) (when defined as BMI >35).

Nice Guidelines state that for women with a BMI of > 30 kg/m\(^2\) should be seen in a specialist antenatal clinic\(^{11}\). After analysis of our patient data and discussion with the dedicated haematologists in our haematology-obstetric clinic; we have adopted a policy of specialised care for women with a BMI ≥ 35 kg/m\(^2\). In women with a BMI below this level they are seen in a specialist clinic if the teams (obstetrics/midwifery) have specific concerns.

There has been much documented evidence to link obesity with an increased risk of complications in pregnancy. The latest Confidential Enquiry into Maternal Deaths ‘Saving Mother’s Lives’ found that more than half of all the women who died from Direct or Indirect causes, for whom information was available, were overweight (BMI<34.9 kg/m\(^2\)).\(^2\) Over 15% of all women who died were significantly obese (BMI>35 kg/m\(^2\)). In this triennium, CEMACH reported 14 of the 31 women with a known BMI who died of a thromboembolic event were obese.

The predominance of obese women among those who died from thromboembolism, sepsis and cardiac disease means that early multidisciplinary planning regarding mode of delivery and use of thromboprophylaxis for these women is essential. The increased risks of complications for both mother and baby are outlined in Table 1.

*The development of guidelines for care of obese pregnant women is one of the ‘top ten’ key recommendations from ‘Saving mother’s Lives’. In addition, NICE Guideline for Antenatal care (2003) lists obesity as a condition, which requires additional care.*

**Table 1. Risks related to obesity in pregnancy**\(^{2-6}\)

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Obstetric woman with BMI >35

December 2012
2. **Objectives.**

This Guideline outlines a pathway for the provision of high-quality, supportive care for women with a BMI >35 at first referral to a Midwife or Obstetrician. The aim of the Guideline is to offer women the best opportunity for optimal maternal and fetal outcomes, whilst maintaining their dignity and self-esteem. This is achieved through the following objectives:

2.1 To identify women with BMI >35 at booking as high-risk and ensure they are referred for consultant led-care.

2.2 To ensure early referral to a dietician for dietary advice.

2.3 To ensure care is planned in partnership with the woman and there is senior obstetric input into this care plan.

2.4 To ensure women with BMI >40 are referred to a consultant anaesthetist/ Obstetric Anaesthetic clinic antenatally for assessment.

2.5 To ensure women with BMI >50 have a patient specific management plans in the note apart from routine management plan for high BMI.

3. **Scope**

3.1 This policy applies to all Trust staff in all locations including temporary employees, locums, agency staff, contractors and visiting clinicians’.

3.2 To facilitate multi-disciplinary working to provide evidence based care for the high risk obstetric patient with a BMI over 35.

4. **Definitions/Abbreviations**

**Obesity:** For this guideline the obese patient is classed as the lady who has a Body Mass Index (BMI) of 35 or over.

**Macrosomia:** The term used to describe a newborn of excessive weight usually defined as being greater than 4000g.

**ADAU:** antenatal day assessment unit

**PET:** Pre-eclampsic Toxaemia

**GTT:** Glucose Tolerance Testing

5. **Responsibilities**

At booking the Midwife obtaining the history will complete a risk assessment tool and identify the woman with a BMI of 35 or over as being high risk.
6. **Identification of the Woman with Risks Associated with Obesity**

6.1 **Antenatal Booking**

- Record height and weight, calculate BMI. (divide the weight by the height squared, ie if woman is 1.6m tall and weighs 65Kg the calculation would be 1.6 x 1.6 = 2.56, BMI is therefore 65kg divided by 2.56 = 25.39)
- Women with a BMI > 35 should be advised to deliver in hospital in a Consultant led Unit
- Document in Hand Held Record & hospital notes, and maternity computerised information system.
- Discuss individual BMI with the woman. If over 35, include weight management and dietary/lifestyle advice. Advice on exercise should include 30 minutes of gentle/moderate exercise five times a week, such as swimming, walking and aqua natal.
- Obese women should also be referred to the dietician after discussion/agreement with the woman. Referrals can be made by completing the appropriate referral form. Discussion and referral can be made at any point during the pregnancy.
- Women with a BMI >30 should be advised to deliver at a unit which provides both midwifery and obstetric led care.
- Women with a BMI >35 should be referred for consultant-led obstetric care. Counsel about the increased risk of health problems during and after pregnancy in a sensitive and supportive manner.
- Promote breastfeeding.
- Full plan of care to be clearly documented in the notes in relation to delivering in the Obstetric Led Unit, and the possible complication during the intrapartum period.

6.2 **Ongoing Care**

- Offer continued advice & support. Encourage the mother to keep weight gain to less than 10 – 12 Kg. Weight loss is also an option using a sensible eating plan.
- The usual anomaly scan and serum screening for congenital abnormality should be recommended in all women who are obese.
- Symphysio-fundal height (SFH) measurements – see below in ‘Macrosomia’

6.3 **Ultrasound Note**

In 2008 the Fetal Anomaly Ultrasound Standard Setting Group (UK National Screening Committee NHS Fetal Anomaly Screening Programme for England) consultation document stated:

‘The Expert Group considered how many attempts should be made to identify structures during screening. This was particularly relevant when women were obese or when the fetal position made visualisation difficult. In these circumstances it was agreed that if suitable views cannot be obtained after 2 attempts then it would not be acceptable to attempt a third time. The limitations of screening by ultrasound need to be explained to woman if misunderstanding is to be avoided.’
6.4 **Intrapartum Care**

- On admission, obtain blood for FBC, group and save
- Do risk assessment for thromboembolism, document and follow plan:
  - Offer TED stockings, keep as mobile as possible and maintain hydration for all
  - For thromboprophylaxis if BMI >35 and any other risk factor: e.g. PET, haemorrhage, prolonged labour, midcavity instrumental delivery, immobility, over 35 years, parity >4. Please refer to Thromboprophylaxis in Obstetrics guideline for further information.
  - May need higher dose of Clexane (discuss with consultant)

- Adhere to the fetal monitoring guidelines – use fetal scalp electrode where appropriate
- Offer active management of the third stage of labour.
- Seek senior advice from consultant obstetrician and anaesthetist if needs caesarean section (see below).

6.5 **Postnatal Care**

- Reassess need for thromboprophylaxis as above.
- For early ambulation / TED stockings
- Continue to encourage healthy eating and exercise. Reinforce the health messages and the benefits of achieving a healthy BMI for future well-being and subsequent pregnancies. Consider dietician referral.
- Support with breastfeeding

7. **Specific Investigations**

Specific investigations can help to reduce the complications associated with obesity in pregnancy.

7.1 **Gestational Diabetes (GDM)**

7.1.1 During pregnancy obese women have an increased risk of GDM therefore they should be given an appointment for Glucose Tolerance Testing (GTT) at 26-28 weeks gestation. Women with GDM should be referred to the diabetic team/DSM as soon as possible to commence home blood glucose monitoring / treatment.

7.2 **Pregnancy Induced Hypertension and Pre-eclampsia**

7.2.1 There is evidence to suggest the relationship between obesity and hyperlipidaemia may lead onto the development of pre-eclampsia as hyperlipaemia damages endothelial cells and causes vasoconstriction and platelet aggregation.

7.2.2 Regular Blood pressure measurements should be taken and recorded using an appropriately sized cuff. Use a large cuff for BP if mid-biceps
measurement >32 cm. The frequency of the measurements should be individually assessed, but should be not less than fortnightly during the 3rd Trimester.

7.2.3 If BMI over 35, consider Aspirin 75 mg daily throughout pregnancy if further risk factors for pre-eclampsia exist.

7.3 Deep Vein Thrombosis

7.3.1 Deep vein thrombosis and its complications are seen more frequently in the obese obstetric woman. It is therefore imperative that these women see a consultant at the earliest opportunity for a plan of care.

7.3.2 An information leaflet informing the woman about the prevention and symptoms of DVT’s should be given at booking.

7.3.3 Passive exercises should be discussed and demonstrated to the woman.

7.3.4 Consider antenatal thromboprophylaxis if additional risk factors for venous thromboembolism exist. These women may need higher dosages of anticoagulants.

7.3.5 Women with a BMI over 40 should be referred to Obstetric Haematology for specialist advice regarding thromboprophylaxis.

7.4 Macrosomia

7.4.1 Gross, Sokol and King (1980) observed that more macrosomic babies occur in obese women.

7.4.2 Symphysio-fundal height (SFH) measurements to monitor growth may be more difficult to perform accurately, however this is very patient dependent. In those where SFH cannot be measured accurately consider fetal growth scanning at 28 & 34 weeks.

7.4.3 Delivery suite midwives should be aware of the risks associated with the delivery of a fetus with macrosomia i.e shoulder dystocia, perineal and vaginal lacerations. The BMI will be recorded in the special features part of the clinic held summary to alert the delivery suite midwives to this increased risk.

7.5 Anaesthetic Assessment/Management of Women with Raised BMI

7.5.1 The pregnant morbidly obese woman presents a challenge to the anaesthetist, as highlighted in the recent CEMACH report. Women have a higher incidence of difficulty with intubation and airway management. Regional techniques for analgesia and operative delivery can be technically difficult and are associated with more side effects. Women also have other co-morbidity that may impact on anaesthesia (e.g. hypertension, ischaemic heart disease, respiratory disease, sleep apnoea and diabetes).
7.5.2 The CEMACH report has stressed that women with morbid obesity must be assessed by the anaesthetist in the antenatal period.

7.5.3 **Referral for Anaesthetic Assessment**

- At booking/Mid-T scan, refer women with a BMI >40 to the Obstetric anaesthetic clinic for assessment.
- Women with a BMI >40 should also be referred if they have significant medical disorders (ischaemic heart disease, hypertension, respiratory disease, diabetes, sleep apnoea or previous anaesthetic complications).
- Women advanced in pregnancy who could deliver prior to next clinic appointment should be discussed/seen with the duty consultant anaesthetist covering Labour Ward.
- All women should have seen the anaesthetist by 34 weeks gestation. The anaesthetic plan will be clearly documented in the woman’s notes. If intubation or airway difficulties are anticipated then this will be fully discussed with the woman and obstetrician so that a plan for delivery can be made.
- An alert should be placed on the MIS system or prominently in the notes so that the duty anaesthetist can be informed as soon as the woman is admitted to hospital
- A note should also be made in the hand-held notes if intubation or airway problems are anticipated.
- Trainee anaesthetists should discuss all obese women needing operative delivery or regional analgesia in labour with a consultant anaesthetist. Where airway or intubation difficulties are anticipated it will be mandatory for the consultant anaesthetist to attend.

7.6 **Caesarean Section**

7.6.1 There has been much debate between the effect of obesity and the caesarean section rates however most studies show a direct correlation\(^4\)\(^6,13,14\)

7.6.2 Obesity is a risk factor for intra-operative and post-operative complications including haemorrhage, post operative wound infections, aspiration and pulmonary embolism\(^7\).

7.6.3 Post-operative thromboprophylaxis as per routine Trust guideline for C.Section

7.6.4 **Obese women after an operative delivery may need to be monitored in a high dependency setting post-operatively.**
8. Care of the morbidly obese woman (BMI >40)

8.1 As above – including early referral to Obstetric Haematology clinic and Obstetric Anaesthetic clinic for multidisciplinary input/care plan.

8.2 An individual assessment should be made in the third trimester of pregnancy, to ensure the woman has appropriate equipment for the mode of delivery within the department. Should the woman's needs exceed that of the department's available equipment (see below), a plan will be made by the Multi Disciplinary Team in conjunction with the Bariatric Team. The MDT will comprise of consultant obstetrician and anaesthetist, specialist midwife, Theatre team representative, labour ward manager / senior midwife, Tissue viability Nurse and Trust Bariatric team representative in case of super morbid obesity.

8.3 Contact local representative to register with UKOSS (UK Obstetric Surveillance system):

- Any woman weighing over 140kg at any point during pregnancy
- Any woman with a BMI > 50 at any point
- Any woman estimated to be in either of above categories with weight exceeding capacity of hospital scales

9. Equipment

Equipment must be available, as appropriate, for women with raised BMI in all care settings, this includes:

- Operating tables able to take women with weights up to 300kg. Lateral extensions may be required in certain cases.
- Delivery and ward beds able to take women with weights exceeding 300kg
- Appropriate sized blood pressure cuffs (For very large women invasive arterial monitoring may be more accurate)
- A range of lengths of epidural and spinal needles
- Appropriately sized thromboembolic stockings
- Equipment to move women such as hover mattresses and hoists.
- Bariatric beds and chairs

Please note: There is a weight restriction for the theatre table. If the woman's weight is above 300kg another table needs to be ordered. Please inform Labour Ward of this information when booking the Caesarean section. All women should therefore, have their weight checked again at 36 weeks.

If necessary please ask the moving and handling team for advice relating to the use of specialist equipment i.e. beds and chairs, City – ext 6157 (Monday – Friday 9 – 5 only).

10. Equality and Diversity
The Trust recognises the diversity of the local community and those in its employment. Our aim is, therefore, to provide a safe environment free from discrimination and a place where all individuals are treated fairly, with dignity and appropriately to their need. The Trust recognises that equality impacts on all aspects of its day-to-day operations and has produced and Equality Policy Statement to reflect this. All policies are assessed in accordance with the SWBH Equality Impact Assessment Toolkit, the results for which are monitored centrally.

11. Review

This policy will be reviewed in three years time. Earlier review may be required in response to exceptional circumstances, organisational change or relevant changes in legislation of guidance’.

12. Training and Awareness

Training will be provided as stated in the Training Needs Analysis.

Staff will be made aware of this policy via the Educational group and notified that copies are available on Labour ward and on the Trust Intranet.

13. Key Performance Indicators/Process for Monitoring Effectiveness

There will be twice yearly audit of 100 patients attending the antenatal clinic. This will look at:

- BMI calculation and record in the pregnancy handheld notes
- In the women with a BMI above 35 there must be documentation of referral and advice
  - Documented referral
  - Advice including recommendation to deliver labour ward
- Women with a BMI ≥40
  - Had an antenatal consultation with an obstetric anaesthetist
  - Documented obstetric anaesthetic management plan for labour and delivery
  - Documented assessment / plan the by MDT / Bariatric Team
  - Suitable equipment made available for women with a high BMI

Non-availability of equipment/devices should be reported via the incident form process or managed through risk assessments. This will be escalated through the Trust processes for incidents/risk assessment.

14. References


13. Weiss J, Obese women more likely to have pregnancy complications and caesarean sections than women of average weight www.news-medical.net 20th May 2004


15. Further Enquiries

Contact Head of Midwifery or Consultant Midwife for further information regarding this policy.

16. Appendices

1. Pathway for High Risk Obese Obstetric Women
2. DVT – Patient Leaflet
Pathway for High Risk Obese Obstetric Women

Woman assessed at booking as being high obstetric risk (BMI >35)

Woman must be informed that they have been assessed as a high obstetric risk and why

Discuss diet and offer referral to dietician

If referral accepted, booking midwife to complete referral form

Provide woman with DVT information leaflet

Booking midwife to liaise with pathology lab to organise a GTT for 26-28 weeks

Woman to be informed about increase risk of DVT. Midwife should demonstrate passive exercise

Woman to see Obs consultant so a plan of care can be discussed and documented

At booking/mid-T appointment midwife seeing woman should make arrangements for her to see an Anaesthetist during 2\textsuperscript{nd} /3\textsuperscript{rd} trimester

Follow-up appointments should be made as per consultant plan
What is the Treatment for a DVT?

The aims of treatment are:
- To prevent the clot spreading up the vein and getting larger
- To reduce the risk of post-thrombotic syndrome developing

To prevent a further DVT in the future

Preventing a DVT

A DVT is often a ‘one-off’ event. Some people have an on-going risk or continued immobility. However there are things you can do to prevent a DVT.
- If possible, avoid long periods of immobility such as sitting in a chair for many hours. If you are able, get up and walk around now and then. A daily brisk walk for 30-60 minutes is even better. The aim is to stop the blood ‘pooling’ and to get the circulation in the legs moving. Regular exercise of the calf muscles also helps. You can do some exercises even when you are sitting.
- If you travel on a long plane or train journey you should have little walks up and down the aisle every now and then. Also exercise your calf muscles whilst sitting in your seat.

Please talk to your community midwife or GP if you have any queries or need any more information.
What is a Deep Vein Thrombosis?

A deep vein thrombosis (DVT) is a blood clot that forms in a deep leg vein. These are blood vessels which go through the muscle (they are not the veins which you can see just below the skin). A calf vein is the most common site for a DVT. A thigh vein is less commonly affected.

Why do Blood Clots form in Leg Veins?

Blood normally flows quickly through veins, and does not usually clot. Sometimes a DVT occurs for no apparent reason. However the following increase the risk of having a DVT.

- **Immobility** which causes blood flow in the veins to be slow. Slow flowing blood is more likely to clot than normal flowing blood.
- **The contraceptive pill/hormone replacement therapy (HRT)** which contains oestrogen can cause the blood to clot slightly more easily. Women who are taking the pill or HRT have a small increased risk of DVT.
- **Pregnancy** increases the risk. About 1 in 1000 pregnant women have a DVT
- **Obesity** also increases the risk of having a DVT.

What are the Symptoms of a Deep Vein Thrombosis?

The typical symptoms are pain, tenderness and swelling of the calf. Blood that would normally go through the blocked vein is diverted to outer veins. The calf may then become warm and red. Sometimes there are no symptoms and a DVT is only diagnosed if a complication occurs.

Is a DVT Serious?

When a blood clot forms in a leg vein it usually remains stuck to the vein wall. The symptoms tend to settle gradually, but there are two main possible complications:

- **Pulmonary embolus** is a blood clot which travels to the lungs. In a small number of people who have a DVT, part of the blood clot will break off and travel in the blood stream. The clot will get stuck in the lungs. A small clot may not cause any problems, medium sized clots can cause breathing problems and chest pain and a large clot can cause a sudden collapse.
- **Post-thrombotic syndrome** occurs in up to 6 out of 10 people who have a DVT but do not receive treatment. These people develop long term symptoms in the calf, which occur because the increased flow and pressure of the diverted blood in other veins, can affect the tissues of the calf. Symptoms range from mild to severe and include: calf pain, discomfort, swelling and in severe case an ulcer on the skin can develop.