©Milton Keynes University Hospital NHS Foundation Trust
This document is uncontrolled once printed. Please check on the Trust's Intranet site for the most up to date version.

Obesity in Pregnancy

Classification :	Guideline		
Authors Name:			
Authors Job Title:			
Authors Division:	Women's Health CIG		
Departments/ Groups this Document Applies to:	Maternity		
Date of Approval:	11/2009	**Review Date:**	03/2019
Approval Group:	Women's Health CIG	**Last Review:**	03/2016

Unique Identifier: MIDW/GL/131	**Status:** Approved	**Version No:** 3.1
Scope: Maternity		
To be read in conjunction with the following documents: None		
CQC Regulations: 1, 2, 4, 7, 8, 9, 12, 13		

Disclaimer –

Since every patient's history is different, and even the most exhaustive sources of information cannot cover every possible eventuality, you should be aware that all information is provided in this document on the basis that the healthcare professionals responsible for patient care will retain full and sole responsibility for decisions relating to patient care; the document is intended to supplement, not substitute for, the expertise and judgment of physicians, pharmacists or other healthcare professionals and should not be taken as an indication of suitability of a particular treatment for a particular individual.

The ultimate responsibility for the use of the guideline, dosage of drugs and correct following of instructions as well as the interpretation of the published material **lies solely with you** as the medical practitioner.

©Milton Keynes University Hospital NHS Foundation Trust
This document is uncontrolled once printed. Please check on the Trust's Intranet site for the most up to date version.

Index

Guideline Statement

To achieve a good outcome and experience in managing pregnant women with obesity.

Executive Summary

There is substantial evidence that obesity in pregnancy contributes to increased morbidity and mortality for both mother and baby. The CEMACH Perinatal Mortality 2005 Report found that approximately 30% of the mothers who had a stillbirth or a neonatal death were obese. Saving Mothers' Lives: reviewing maternal deaths to make motherhood safer: 2006-2008 report (RCOG 2011) identified obesity as a risk factor for maternal mortality. 49% of the women who died (for whom a BMI had been recorded) had BMI of ≥25 and 27% had BMI ≥30.

©Milton Keynes University Hospital NHS Foundation Trust
This document is uncontrolled once printed. Please check on the Trust's Intranet site for the most up to date version.

Increased rates of obesity related morbidity and mortality are reflected in increased social and financial costs:

- Obese women spend an average of 4.83 more days in hospital and the increased levels of complications in pregnancy and interventions in labour represent a 5 fold increase in cost of antenatal care (Galtier-Dereure et al, 2000)
- The costs associated with newborns are also increased, as in babies born to obese mothers there is a 3.5 fold increase in admission to Neonatal Intensive Care Unit (NICU) (CEMACE 2009)
- Maternal obesity and diet during pregnancy creates a metabolic environment that affects fetal growth and may result in later development of metabolic syndrome and cardiovascular disease (Simiri and Goulis, 2010)

©Milton Keynes University Hospital NHS Foundation Trust
This document is uncontrolled once printed. Please check on the Trust's Intranet site for the most up to date version.

Definitions

Body Mass Index **(BMI)** is an index of weight-to-height calculated by a woman's weight in kilograms (kg) divided by the square of height in metres (kg/m2). This protocol is divided into 2 sections, clinical issues and manual handling issues.

- Obesity is defined as a BMI of ≥ 30 m^2
- BMI 30-34.9 CLASS1
- BMI 35-39.9 CLASS 2
- BMI>=40 CLASS 3 (MORBID OBESITY)

1.0 Roles and Responsibilities:

Obstetricians – decision making, discussion, planning care
Midwives – decision making, pre and post birth care
Anaesthetists – clinical assessment and decision making
Back care team – assessment and decision making
Dietitians – dietary advice

2.0 Implementation and dissemination of document

The information within this document will be disseminated throughout the maternity unit by available on the hospital intranet.

©Milton Keynes University Hospital NHS Foundation Trust
This document is uncontrolled once printed. Please check on the Trust's Intranet site for the most up to date version.

3.0 Processes and procedures

3.1 Background and Clinical Issues

- The increase prevalence of obesity in the United Kingdom has been widely publicized and the risks of maternal death among pregnant obese women has been highlighted by the Saving Mother's Lives (CEMACH 2006-2008). 27% of all direct and indirect deaths occurred in women with a BMI of ≥30 (CEMACH 2003-5).
- The key to successful maternity care of women with a raised BMI involve:
  - Multidisciplinary team approach
  - Individualised care to include all risk factors

3.2 Complications

Obesity in pregnancy is associated with an increased risk of both fetal and maternal complications. These include:

Maternal risks	Fetal risks
Death/ severe morbidity	Still birth
Cardiac disease	Neonatal death
Spontaneous miscarriage	Congenital anomalies
Recurrent miscarriage	Prematurity
Pre-eclampsia/ Gestational HTN	Macrosomia
Gestational Diabetes	Shoulder Dystocia
Thromboembolism	Difficulty in intrapartum monitoring
Wound infection	Risk of childhood obesity & metabolic disorders
PPH	
Low breast feeding rates	
Anaesthetic complications	
Higher rates of caesarean section	

3.3 Antenatal Care

3.3.1 Booking Assessment and BMI Recording

All women booking for maternity care will have their weight and height measured and their body mass index calculated at the antenatal booking visit. Measurements are recorded in the handheld notes and electronic patient information system

3.3.2 All Women with BMI>30

- Insert raised BMI care pathway plan (see Appendix 1) in handheld notes and ensure completed.
- Women wishing to become pregnant should be advised to take 5mg folic acid supplementation daily, starting at least one month before conception and continuing during the first trimester of pregnancy.
- Women are advised to take supplementation 10 micrograms vitamin D, daily during pregnancy and while breastfeeding.
- BP measurements must be taken using the appropriate sized cuff.
- Consider aspirin 75mg once daily if any additional risk factor for pre-eclampsia, eg, Maternal age, previous pre-eclampsia, essential hypertension

©Milton Keynes University Hospital NHS Foundation Trust
This document is uncontrolled once printed. Please check on the Trust's Intranet site for the most up to date version.

- Discussion of healthy eating and exercise during pregnancy and need to avoid excessive weight gain. VTE risk assessment using VTE risk assessment tool: if 2 additional risk factors must be considered for thromboprophylaxis antenatally and postnatal risk assessment also undertaken. If a woman requires antenatal dalteparin she should continue postpartum for 6 weeks.
- Refer for OGTT at 24-28 weeks for screening for gestational diabetes.
- Documented discussion of the possible intrapartum risks and ways to minimize these risks:
  - Difficulties with fetal monitoring and may need fetal scalp electrode
  - Increased incidence of slow progress in labour
  - Increased incidence of shoulder dystocia
  - Increased risk of emergency Caesarean section and that Caesarean may be technically more difficult.
  - Less chance of successful VBAC
  - Need to prioritise the safety of the mother at all times and use a multidisciplinary approach for decision making
  - Increased incidence of primary post partum hemorrhage

3.3.3 Additional Steps for Women with BMI ≥35

Please follow all steps as for BMI > 30 and these additional steps:

- Refer the patient for Consultant-led care and plan for a delivery in hospital. Some antenatal appointments may be shared with the Community Midwife in later pregnancy if progress is normal and provided a large BP cuff is available.
- Serial growth scans to be arranged from 26-28 weeks until delivery, with estimated fetal weight plotted on growth charts.
- Symphysis fundal height measurements should not be performed, as per Saving Babies Lives (see Fetal Growth Assessment guideline).
- Women with a booking BMI >35 have an increased risk of pre-eclampsia therefore monitor urine and B/P every 3 weeks till 32 weeks.
- Monitor BP and urine every 2 weeks from 32 weeks gestation and until delivery
- Re-measure maternal weight in 3rd trimester.
- Manual handling assessment at 36 weeks to be documented in notes

3.3.4 Additional Steps for Women with BMI>40

Please follow all steps above for BMI > 30 and >35 and these additional steps:

- All women with BMI >40 and any additional co-morbidity must be referred to maternal medicine clinic.
- Consider antenatal thromboprophylaxis in all women with BMI > 40
- Postnatal thromboprophylaxis for a minimum of 10 days regardless of mode of delivery
- Referral to obstetric anaesthetic clinic at 34-36 weeks gestation. This appointment is to discuss potential issues with venous access and regional and general anaesthesia. The record should be in handheld notes and uploaded on EDM.
- Women must have a documented manual handling assessment at 36 weeks. This assessment is to look at equipment requirements in labour and potential tissue viability issues. This assessment will be done by the antenatal clinic midwife.

©Milton Keynes University Hospital NHS Foundation Trust
This document is uncontrolled once printed. Please check on the Trust's Intranet site for the most up to date version.

3.3.5 Additional Steps for Women with BMI>45

Please follow all steps above for BMI >30, >35 and 40 and this additional step:
These women must be referred to maternal medicine clinic.

3.3.6 Antenatal Admissions

All women with a BMI over 30 who are admitted:

- VTE risk assessment must be repeated and documented on VTE risk assessment form
- Complete waterlow assessment and consider any tissue viability issues.

3.3.7 Summary of Antenatal Care

BMI>30
• Use BMI care pathway • Folic Acid 5mgs OD until 12/40 gestation • Vitamin D 10mcg OD supplementation throughout pregnancy • Consider Aspirin 75mgs OD if addition risk for pre-eclampsia • BP monitoring with appropriate sized cuff (upper arm circumference ≥35cm, use large cuff) • Ongoing VTE assessment • OGTT between 24-28 weeks • Documented discussion of risks intrapartum • Active management of 3rd stage
BMI >35 in addition to all the steps above
• Referral to consultant clinic • Serial growth scans from 26-28 weeks until delivery.Increase surveillance for pre-eclampsia – see every 3 weeks between 24 and 32 weeks then every 2 weeks until delivery • Re-measure maternal weight in 3rd trimester • If additional co-morbidities for referral to obstetric anaesthetic clinic • Thromboprophylaxis for a minimum of 10 days regardless of delivery mode in accordance with VTE guidelines
BMI > 40 in addition to all the steps above
• If additional co-morbidity refer to maternal medicine clinic • Referral to obstetric anaesthetic clinic at 34-36 weeks • Consider antenatal thromboprophylaxis if fulfils RCOG VTE 37a guideline • Documentation of manual handling assessment and tissue viability issues at 36 weeks
BMI >45 in addition to all the steps above
• Referral to maternal medicine clinic

DALTEPARIN DOSE: See trust VTE guideline

©Milton Keynes University Hospital NHS Foundation Trust
This document is uncontrolled once printed. Please check on the Trust's Intranet site for the most up to date version.

3.4 Intrapartum Care

- Women with BMI >30-34.9 can deliver under midwifery led care in delivery suite.
- Women with a BMI >35 should give birth on the delivery suite with consultant led care.
- All women with a BMI >30 should be aware of their increase in risk of intrapartum complications including: difficulty with fetal monitoring, risk of slow labour and shoulder dystocia, increased risk of requiring Caesarean section and technical difficulties with Caesarean, risk of postpartum haemorrhage.
- The decision regarding mode of delivery should be made on an individual basis by the woman and the Consultant in charge of her care.

3.4.1 Vaginal Birth After Caesarean

- Women with a booking BMI >30 should have an individualised plan
- Decision for VBAC following informed discussion and consideration of all relevant clinical factors. Obesity is a risk factor for unsuccessful VBAC. If no clear plan for VBAC on admission discuss with on call consultant. Refer to VBAC guidelines.
- All women with a BMI >30 should be recommended to have active management of the third stage of labour. This should be documented in the notes.
- Women with a BMI >30 having a caesarean section have an increased risk of wound infection and should receive prophylactic antibiotics at the time of surgery and consideration given for an additional course of oral antibiotics.

3.4.2 Admission to Delivery Suite

For women with a raised BMI who are admitted in labour or for induction of labour please ensure the following:

- Inform obstetric SPR (all women with BMI >35)
- Inform obstetric consultant (all women with BMI >40)
- Inform anaesthetist (all women with BMI >40 or >35 with co-morbidity)
- Consider early IV access
- Consider ultrasound to confirm presentation
- Ensure VTE risk assessment is completed in labour – stop low molecular heparin once in early labour. Consider flowtron boots.
- Advise continuous monitoring for women with BMI >40 with FSE (fetal scalp electrode).
- Inform theatre staff of any women who weighs >120kg
- A pressure sore score should be performed hourly to assess tissue viability.
- Consider ranitidine 150mg every 6 hours during labour

3.4.3 Delivery

- In view of the increased risk of fetal macrosomia and shoulder dystocia, the Obstetric SR (Consultant) should be notified of the impending delivery. Remember that routine manoeuvres for shoulder dystocia, such as McRoberts position and suprapubic pressure, may be difficult If the patient needs an instrumental delivery for the usual indications, consider delivery in theatre.
- If delivery is by LSCS, either elective or emergency, the case must be discussed with the on-call Consultant. Consider avoiding the area directly under the panniculus because of the increased risk of infection post-operatively. Good haemostasis is essential; use of a subcuticular drain may be appropriate. Use of interrupted sutures to the skin is advisable,

©Milton Keynes University Hospital NHS Foundation Trust
This document is uncontrolled once printed. Please check on the Trust's Intranet site for the most up to date version.

either prolene or staples, with a pressure dressing. Sutures should be removed on day 5 post delivery. Consider a course of broad-spectrum antibiotics. Discuss good wound care/ hygiene with patient.

- Consider giving IM syntometrine into arm- deltoid, as there may be difficulties in injecting in leg muscles which can affect absorption.

3.4.4 After Delivery

Postnatal Care

- Ensure adequate breast feeding advice and support. Obesity is associated with low breastfeeding initiation and maintenance rates. Women with a booking BMI >30 should receive appropriate specialist advice and support postnatally regarding the benefits, initiation and maintenance of breastfeeding and advised about starting Colostrum harvesting at 36 weeks gestation.
- If the woman (BMI>40) has not been antenatally referred to the Dietetics service, this should be considered postnatally.
- VTE prophylaxis in accordance to RCOG 37a and trust guidelines.

3.5 Manual Handling Issues and Specialist Equipment

- Standard delivery beds take a weight up to 180kg
- Soft beds on ward 9 or 10 take weight up to 220kg
- Toilets on wards take a weight up to 178kg

©Milton Keynes University Hospital NHS Foundation Trust
This document is uncontrolled once printed. Please check on the Trust's Intranet site for the most up to date version.

4.0 Statement of evidence/references

References:

CEMACE/RCOG (2010) Management of women with obesity in pregnancy

Association of Anaesthetists Great Britain and Ireland. Peri-operative management of the morbidly obese patient. 2007 aagbi.org/

CMACE. Saving Mothers' Lives: reviewing maternal deaths to make motherhood safer: 2006–08. The Eighth Report on Confidential Enquiries into Maternal Deaths in the United Kingdom. BJOG 2011;118(Suppl. 1):1–203.

Hignett S. et al (2007) Risk assessment and Process planning for bariatric patient handling pathways http://www.hse.gov.uk/research/rrpdf/rr573.pdf

National Obesity Forum (2001) The guidelines on the management of adult obesity and overweight in primary care.www.nationalobesityforum.org.uk

National Institute for Health and Clinical Excellence(NICE). Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children. December 2006 CG43

National Institute for Health and Clinical Excellence(NICE). Antenatal care: Routine care for the healthy pregnant woman. October 2003 CG6

Royal College of Obstetricians and Gynaecologists(RCOG). Thromboprophylaxis during pregnancy, labour and after normal vaginal delivery. Green top guideline no.37 2004

Royal College of Obstetricians and Gynaecologists(RCOG). Thromboembolic disease in pregnancy and the puerperium: acute management. Green top guideline no.28 2001

External weblinks: Please note that although Milton Keynes University Hospital NHS Foundation Trust may include links to external websites, the Trust is not responsible for the accuracy or content therein.

©Milton Keynes University Hospital NHS Foundation Trust
This document is uncontrolled once printed. Please check on the Trust's Intranet site for the most up to date version.

5.0 Governance

5.1 Record of changes to document

Version number: 3		**Date:** 03/2016		
Section Number	**Amendment**	**Deletion**	**Addition**	**Reason**
	Reviewed and updated			Update

5.2 Consultation History

Stakeholders Name/Board	**Area of Expertise**	**Date Sent**	**Date Received**	**Comments**	**Endorsed Yes/No**

©Milton Keynes University Hospital NHS Foundation Trust
This document is uncontrolled once printed. Please check on the Trust's Intranet site for the most up to date version.

5.3 Audit and monitoring

This Guideline outlines the process for document development will be monitored on an ongoing basis. The centralisation of the process for development of documents will enable the Trust to audit more effectively. The centralisation in recording documents onto a Quality Management database will ensure the process is robust.

Audit/Monitoring Criteria	Tool	Audit Lead	Frequency of Audit	Responsible Committee/Board
a) Percentage of women presenting to service with ≥30 b) Audit of outcome for women with BMI≥40 c) Post birth complications in women with BMI ≥ 40 d) Equipment matches specifications above	Audit and statistics	Obstetricians and Midwives	Annually	Maternity CIG

5.4 Equality Impact Assessment

This document has been assessed using the Trust's Equality Impact Assessment Screening Tool. No detailed action plan is required. Any ad-hoc incident which highlights a potential problem will be addressed by the monitoring committee.

Impact	Age	Disability	Sex (gender)	Gender Reassignment	Race	Religion or Belief	Sexual orientation	Marital Status	Pregnancy & Maternity
Do different groups have different needs, experiences, issues and priorities in relation to the proposed policy?	N	N	N	N	N	N	N	N	N
Is there potential for or evidence that the proposed policy will not promote equality of opportunity for all and promote good relations between different groups?	N	N	N	N	N	N	N	N	N
Is there potential for or evidence that the proposed policy will affect different population groups differently (including possibly discriminating against certain groups)?	N	N	N	N	N	N	N	N	N
Is there public concern (including media, academic, voluntary or sector specific interest) in potential discrimination against a particular population group or groups?	N	N	N	N	N	N	N	N	N

©Milton Keynes University Hospital NHS Foundation Trust
This document is uncontrolled once printed. Please check on the Trust's Intranet site for the most up to date version.

Appendix 1: Raised BMI Care Pathway

BMI at booking _____

Surname:
Forename:
DOB:
Hospital No:
Or affix Patient Label

Pregnancy and labour care pathway for women with BMI ≥30 or above			
Action required	**Notes**	**Date completed**	**Signature**
Advised to take increased dose of folic acid – 5mg – in first trimester	Folic Acid available from GP's/ pharmacy		
Advised to take 10mcg vitamin D throughout pregnant and whilst breastfeeding	Vitamin D available from GP's/ pharmacy		
Screening for gestational diabetes between 24-28 weeks gestation			
Increased risk of pre-eclampsia. See every 3 weeks at 24-32 weeks, every 2 weeks from 32 weeks -Delivery	For additional team midwifery follow up. Do not send to DAU unless indicated		
Place of birth discussed in antenatal period and recorded in notes by 36/40 (Home, Delivery Suite) and **discussion of associated risk**	Mothers may want a home birth or to use pool. Need to consider this in discussion. **See points over page**	Home Delivery Suite	
Overall obstetric management plan for intrapartum and postnatal care documented in notes			
Active management of 3rd stage discussed	Discuss increased risk of bleeding		
Additional pregnancy care for all women with BMI ≥35			
Referral for consultant led care, shared with maternity team.	As per guideline		
Additional fetal ultrasound for growth and liquor volume at 36 weeks gestation.	As per guideline		
Assessment for specialist equipment requirement after 36 weeks.	See **manual handling guideline**		
Additional pregnancy care for all women with BMI ≥40			
Consultation in joint Obstetric/anaesthetic clinic after 32 weeks.	Ensure appointment made to see Anaesthetist		
Consider tissue viability and manual handling requirements from 36 weeks gestation. *See Trust Guideline*	Look at PUP guideline.		

Information mothers need to know

©Milton Keynes University Hospital NHS Foundation Trust
This document is uncontrolled once printed. Please check on the Trust's Intranet site for the most up to date version.

Most pregnancies in women with raised BMI will result in a healthy baby. However, adverse pregnancy outcomes also rise with BMI.

Women are at a higher risk of:

1. Increased risk of Gestational diabetes
2. Hypertension
3. Thromboembolism
4. preterm labour
5. Increased risk of induced labour
6. Increased risk of instrumental delivery
7. Increased risk of operative delivery
8. Increased risk of maternal death

For further information please refer to the NICE guidance for 'Dietary interventions and physical activity interventions for weight management before during, and after pregnancy'

http://www.nice.org.uk/guidance/PH27

Other considerations

1. BMI > 30 poses greatest risk to mother and baby.
2. Advice needs to be given regarding healthy diet and being physically active
3. Making changes during pregnancy will make it easier to move towards a healthy weight after giving birth
4. Manual handling considerations apply to mothers with any reduced mobility, but should also be considered for labour
5. Tissue viability – see Trust guideline. (is there one?)

©Milton Keynes University Hospital NHS Foundation Trust
This document is uncontrolled once printed. Please check on the Trust's Intranet site for the most up to date version.

Appendix 2: Patients with morbid obesity - practical aspects

Equipment

- Table: Maternity theatre 1 table X 350KG: Table 2 x450kg.
- Lithotomy poles: The current Lithotomy poles are sufficient to support Women with raised BMI.
- Slide sheets: 115cms wide kept in all clinical areas.
- Wide BP cuffs: All clinical areas.
- Arterial line: Consider for most patients the need to use the forearm.
- Epidural / spinal: Consider using two foot stool without wheels as foot rests whilst patient undergoes siting of regional block.
- Nasal cannulae: For overnight oxygenation.
- Electric bed: Post operative management.

Anaesthetic kit

- Tuohy needles: 80mm, 110mm and 150mm 18g or 16g.
- CSE kits: (Pjunck) 90mm Tuohy kits 18g or 16g, or use 110mm Tuohy with Vygon 25g x 145mm whitacre (pencil point) spinal needle.

Pre Delivery

- Early anaesthetic review
- Check airway and intubation parameters.
- Check supine Sp02 >96% on room air.

Delivery

- Get extra experienced hands.
- Consultant Obstetric Anaesthetist and Consultant Obstetrician to be informed of admission and impending delivery.
- Make a strong attempt to avoid a general anaesthetic.
- Regional anaesthesia using standard doses. The epidural space is full of fat so there can be more rather than less spread of a conventional dose.
- Antacid prophylaxis use rigorously.
- Pre-oxygenate in head up position.
- Use the ramp position for intubation i.e. External auditory meatus and the sternal notch horizontal, use a pillow or blankets under the upper chest to achieve this position.
- Polio blade is useful to overcome large breasts.
- Awake intubation may be needed.
- Panniculus will need to be retracted, aim for a vertical pull using sponge forceps and bandages over the top of a weighted drip stand and attach to a firm object.

Post Delivery

Thromboprophylaxis - use the larger doses of low weight molecular heparin, consider discussion with haematologist/ Mat med Cons Miss Khan

- Electric bed.
- HDU may be required.
- CPAP may be needed if sats pre – op reduced.

©Milton Keynes University Hospital NHS Foundation Trust
This document is uncontrolled once printed. Please check on the Trust's Intranet site for the most up to date version.

Appendix 3: Anaesthetic Assessment for Obstetric Patients with BMI>40

Management plan
High Risk Obstetric Anaesthetic Clinic,

Name _____

DOB _____ **Hosp. No** _____
BMI _____ **BP** _____
Obstetric status _____ **EDD** _____
Co-Morbidities

_____
_____

Allergies

_____

Airway Assessment

Mal I II III IV

Neck _____ **TMD** _____

Jaw Protrusion A B C

Spine

Spaces felt yes no

Anatomic abnormalities

_____
_____
_____

Problems with anaesthesia anticipated?

_____
_____

Anaesthetic management plan _____

_____
_____

©Milton Keynes University Hospital NHS Foundation Trust
This document is uncontrolled once printed. Please check on the Trust's Intranet site for the most up to date version.

Specialist bariatric equipment requirements

Bed
Theatre bed
Chair
Wheelchair
Hoist
Ex large BP cuff
Ex large TEDS

Assessed by **Date**

Sign:

Print: