Women, Children's and Sexual Health Services Division
Maternity Services

Guideline; Obesity / Body Mass Index (BMI)

1. Introduction

It is well documented that maternal weight gain in pregnancy is a poor predictor of fetal growth. However, BMI calculation is important because there is an association between low pre-pregnancy weight (low BMI) and small for gestational age babies, and between high pre-pregnancy weight (high BMI) and pregnancy, delivery and postnatal complications.

The increasing prevalence of obesity in the UK has been widely publicised and the risks of maternal death among pregnant obese women have been highlighted in Saving Mothers' Lives (CEMACH, 2007). The complications of obesity during pregnancy have far reaching implications for both the woman and her baby, and maternity services must strive to manage the risks associated with obesity and pregnancy (NHS Litigation Authority, 2008).

Below is a list of some of the co-morbidities and complications associated with obesity in pregnancy which have been documented in the published literature:

- Infertility
- Implantation disorders
- Miscarriage
- Fetal birth defects, especially neural tube defect
- Urinary tract infection
- Gestational diabetes
- Type 2 diabetes
- Hypertension, pre-eclampsia and eclampsia
- Slow labour
- Fetal macrosomia
- Thrombophlebitis
- Thromboembolism
- Post-caesarean wound infection
- Post-partum haemorrhage
- Stillbirth and neonatal death
- Maternal death

2. BMI Calculation and Recording

- Body Mass Index (BMI) may be calculated at the initial booking appointment, if accurate scales and height measuring equipment is available, alternatively an accurate assessment of the BMI can be carried out in the Antenatal Clinic when women attend for their dating/ screening scan. If referral has not been made to the consultant, this can be arranged at this point.
- BMI at booking can be calculated as per the formula:
    - Weight (kg) / Height (M^2) [e.g. 58.5 / (1.62 x 1.62) = 22.3]
    - Pre-printed BMI charts are available in all clinical areas
- The recording of the BMI is the responsibility of the healthcare professional undertaking the measurement, regardless of the woman being low or high risk.

- Height, weight and BMI should be recorded in the handheld healthcare records.
- The woman's height and weight will then be recorded on PAS by the failsafe officer.
- If the woman is booking at an advanced gestation, e.g. after 24 weeks, a BMI should be calculated and documented as being performed at that gestation.

3. BMI Ranges

Underweight	<18.5
Healthy weight	18.5-24.9
Overweight	25-29.9
Obesity Class 1	30-34.9
Obesity Class 2	35-39.9
Obesity Class 3	>40

4 Underweight, BMI ≤18.5

- Underweight women are more likely, than women of normal weight, to give birth to infants who are small for gestational age.
- A careful history should be taken to identify women with anorexia nervosa or bulimia.
- BMI is ≤18.5: discuss diet in detail and refer for obstetric opinion and dietician for advice.
- Consider need for serial USS assessment of fetal growth if additional risk factors identified e.g. previous history, smoking, or woman reports weight loss.
- **If diet is poor or restricted**, e.g. gluten free or wheat-free, offer and encourage referral to a dietician send a faxed referral form to 01206 744492.
- Women with an ongoing eating disorder may require emotional or psychiatric support during the pregnancy and an appropriate referral should be made to the psychiatric services

5 Antenatal care for Obesity:

BMI ≥ 30

- **Regular weighing** of this group of women is **unnecessary.**
- **Exercise:** encourage women to continue or adopt regular gentle exercise i.e.; walking**.**
- **Thromboembolism:** Assess risk at booking and throughout pregnancy and ensure appropriate prophylaxis is offered (CHUFT Maternity Guideline 2.12 J)
- **Blood Pressure (BP) Cuff:** the appropriate size cuff should be used for BP measurements
- **Pre-eclampsia;** women with raised BMI are at increased risk of pre-eclampsia and prophylactic Asprin may be appropriate (see CHUFT maternity Guideline 2.12 E)
- **Ultrasound scanning** in women with a raised BMI is technically more difficult as maternal adipose tissue restricts views of the fetus.

5.1 BMI 30 to 34

- Discuss **risks associated with obesity in pregnancy and intrapartum**
- Discuss and **refer to the obstetrician if** other comorbidities exist on an individual basis
- Discuss the advice to take **10 micrograms Vitamin D** supplementation daily during pregnancy and while breast feeding
- Discuss **diet and offer written information** e.g. 'Healthy eating for pregnancy'.
- Refer to Dietitian by faxing the referral to 01206 744492
- Arrange screening for Gestational Diabetes by Oral Glucose Tolerance test between 26–28 weeks gestation. For further information see CHUFT Maternity Guideline 2.6 A

5.2 BMI ≥35

- All care given as above and in addition, refer to Obstetrician at 16 weeks' gestation to
  - Discuss risks associated with obesity in pregnancy.
  - Complete plan of care see Appendix One

5.3 BMI ≥40

Follow plan as in 5.1 & 5.2 and
Refer to **Obstetric Anaesthetist** for plan of care and document in the healthcare records.

- Document individual plan of care and assessment in Trimester 3 for manual handling requirements and tissue viability concerns (Appendix One)

6. Labour and delivery

- All women to be seen by obstetric anaesthetist prior to elective surgery
- VTE risk assessment should be undertaken
- Confirmation of presentation should be made by portable ultrasound scan.
- Inform the duty anaesthetist when a woman with a BMI ≥40 is admitted.
- Consider the use of fetal scalp electrode to monitor the fetal heart rate
- Consideration should be given to care of pressure areas for women who are immobile for prolonged periods
- Women with a BMI ≥40 ideally should have venous access established early in labour
- Women with a BMI ≥35 should be encouraged to have active management of the third stage of labour and the discussion and decision should be recorded in the healthcare records.
- Women with a BMI ≥35 should be advised to give birth in a consultant-led obstetric unit with appropriate neonatal services
- All women with a BMI ≥ 30 should have wound closure as recommended by NICE Clinical Guideline No132 (Caesarean Section, November 2011) as this may help to decrease the incidence of wound complications
- Women who have a BMI ≥35 should ideally have their weight rechecked prior to delivery at term
- Women having a Caesarean section should be considered for Flowtron boots in the immediate postnatal period **if** Anti Embolism stockings are not available in the correct size.

7 Postnatal care and follow-up after pregnancy

- Obesity is associated with low breastfeeding initiation and maintenance rates; ensure women have adequate advice and support.
- Women with gestational diabetes – see Diabetes Guideline No 2.6 for postnatal follow-up
- Women should be prescribed thromboprophylaxis as CHUFT Maternity Guideline 2.12 J
- Women should be encouraged to mobilise as early as appropriate

8. Moving and Handling

An annual manual handling risk assessment will be undertaken in all clinical areas to ensure availability of suitable equipment for all women.

- Any specialist equipment that will be required should preferably be obtained prior to admission.
- The current maximum weight limits of equipment in use; see Appendix Two
- All community midwifery staff have large blood pressure cuffs as standard

- Although Clacton, Harwich and Juno Midwife Led Units have standard Affinity Four Hill-Rom Beds women with a BMI ≥35 would not fulfil the criteria for planned births within these units.
- In the women's home the maximum weight limits of available furniture are not known, hence women with BMI ≥35 insisting on a home birth in these circumstances are putting themselves and potentially the midwife at risk.

9. Bariatric women

When the woman's weight is in excess of 160 kg (25 stone), it will significantly affect her care and management, and pose a risk in terms of manual handling to her care givers. All care providers in the antenatal period should ensure that a risk assessment has been carried out. The special people proforma form is completed (Appendix Three) and sent to the matron of delivery suite. For further information see Trust Bariatric Care Pathway, Procedure Number 010.

10. Thromboprophylaxis

Women with a BMI ≥30 are at an increased risk of thromboembolism, refer to CHUFT Maternity guideline 2.12 J for guidance on the provision of thromboprophylaxis.

11. Monitoring Compliance

Monitoring of this guideline is undertaken on the record keeping session on the monthly maternity statutory training days, using an audit tool and feedback to the multidisciplinary staff present.
Audit Tool includes:

- Documentation of BMI
- Review of the plan for referral to appropriate healthcare professionals

The woman's height and weight are recorded on the patient administration system (PAS)

12. References and further evidence

CEMACH (2007). Saving Mothers Lives. Confidential Enquiries into Maternal Deaths in the UK 2003-2005. London: RCOG Press, 2007.

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Royal College of Obstetricians and Gynaecologists (2006). The Growing Trends in Maternal Obesity. London. RCOG Press.

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The Association of Anaesthetists of Great Britain and Ireland and the Obstetric Anaesthetists' Association (2005). OAA/AAGBI Guidelines for Obstetric Anaesthetic Services. London.

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Appendix One

Maternity Services; Plan of care and Checklist for women with BMI ≥35

Affix label

EDD

Booking BMI:

Referral forms (if appropriate)	Date
Anaesthetic referral form faxed	
Paediatric referral form faxed	

Actions/Issues for discussion	Comments	Signed	Dated
At booking • Advise Vitamin D 10mcg during pregnancy and breastfeeding • Advise healthy eating to limit weight gain, and give leaflet • Offer referral to dietician • Assess risk of VTE			
Consultant assessment • Discussion and documentation of discussion about risks • Notify obstetric anaesthetist if BMI ≥ 40			
Pre-eclampsia • BP – measure with appropriate cuff and document cuff size • Asprin 75mg from 12 weeks to term (if additional moderate risk factor or single high risk factor) • Pre-eclampsia surveillance			
Gestational diabetes • GTT at 26-28 weeks			
Venous thromboembolism • Risk assessment throughout pregnancy • Consider prophylaxis antenatally and postnatally depending on other risk factors • Ensure appropriate doses of Clexane			
Fetal assessment- discuss with women • Potential difficulties with scanning, fetal monitoring • Increased incidence of macrosomia and instrumental and operative deliver			
Place of birth • Recommend consultant unit			

Maternity Services: Plan of care and checklist			
Manual handling • Risk assessment at each admission • Tissue viability in 3rd trimester if BMI ≥ 40			
On admission in labour • VTE assessment • Inform anaesthetist if BMI ≥ 40 • Senior Obstetric review • IV access early in labour if BMI ≥ 40 • Advise active management of labour • If delivery by Caesarean close subcutaneous space if fat layer ≥ 2cm			
Promotion of breastfeeding • Appropriate specialist advice antenatally and postnatally regarding benefits, initiation and maintenance of feeding			
Post delivery • VTE assessment • Early mobilisation, stockings and Clexane® (for 7 days post delivery) • Nutritional advice from appropriately trained professional with a view to weight reduction			

Plans for postnatal period

Appendix Two

Weight Bearing Capacity of Equipment
See Trust Policy Manual Handling for full list and availability of equipment

Area	Company name	Maximum Weight bearing capacity
Antenatal clinic		
Weighing scales	Marsden	200kg
Examination couch	Huntleigh Akron	180kg
Ultrasound Department		
Room 1 couch	Huntleigh Akron	150kg
Room 2 couch	Huntleigh Akron	180kg
Room 3 couch	Huntleigh Akron	180kg
Delivery Suite		
Delivery Bed	Affinity Four Hill-Rom	227kg 68kg (Foot End)
Operating tables	Trumpf	360kg
Hoist	Oxford Electric	175kg
Juno Suite		
Delivery bed	Affinity Four Hill-Rom	160kg
Lexden Ward		
Bed	Huntleigh Contura	180kg

Appendix Three

Women with Individual Requirements: Proforma for Notification to Delivery Suite

NAME: ……

UNIT NUMBER: ……

CONSULTANT: ……

EDD: ……

REASON FOR NOTIFICATION

Please Return to Delivery Suite Matron, Constable Wing, CGH