The Management of Pregnant People with Obesity during Pregnancy (High BMI ≥ 30 kg/m2) or post Bariatric Surgery

Document Control:

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Version History:

Version Number	Date of Update	Author	Reason/Change
8.1	02/11/2020	Charles Bircher	Removed wording about fetal monitoring, as CTG not required
8.2	24/09/2021	Charles Bircher	Reviewed and updated
9	19/10/2022	Charles Bircher	Multiple additions: -screening for OSA -not to refer for USS if SFH >90th centile at 28 weeks and having scan at 32 weeks -Anaesthetic referral antenatally cut off for BMI≥45 (unless comorbidities) -Post bariatric surgery management changed -Consider IOL from 39 weeks -On admission in labour, VBG if BMI ≥45

10	20/01/2023	Charles Bircher	Updated how to refer to Sleep Medicine. Addition of signs of heart disease and VTE
11	04/01/24	Charles Bircher	Addition of advice for nutritional abnormalities post bariatric surgery
12	23/01/24	Charles Bircher	Change MLBU BMI cut off to <35

Previous Titles for this Document:

Previous Title/Amalgamated Titles	Date Revised
None	Not applicable

Distribution Control

Printed copies of this document should be considered out of date. The most up to date version is available from the Trust Intranet.

Consultation

The following were consulted during the development of this document:

Monica Morosan – Consultant Anaesthetist

Philippe Grunstein – Consultant in Sleep Medicine

Anna Haestier – Consultant Obstetrician

Vidya Srinivas – Consultant Endocrinologist

Monitoring and Review of Procedural Document

The document owner is responsible for monitoring and reviewing the effectiveness of this Procedural Document. This review is continuous however as a minimum will be achieved at the point this procedural document requires a review e.g. changes in legislation, findings from incidents or document expiry

Relationship of this document to other procedural documents

This document is a clinical guideline applicable to the Norfolk and Norwich University Hospital; please refer to local Trust's procedural documents for further guidance, as noted in Section 4.

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Quick reference

The following is a quick reference guide for different BMI ranges. It is intended to be read with reference to the full guidance within this guideline and is not exhaustive of all that needs to be done.

		BMI			
		30 - 34.99	35 - 39.99	40 – 44.99	≥45
Pre-conceptual	Folic acid 5mg daily	✓	✓	✓	✓
Antenatal care	Signpost to https://www.justonenorfolk.nhs.uk/healthylifestyles	✓	✓	✓	✓
	Vitamin D 10mcg daily	✓	✓	✓	✓
	POGTT at booking and at 24-28 weeks	✓	✓	✓	✓
	Aspirin score		Score 1 Moderate risk factor for BMI		
	VTE score	Score 1 for BMI		Score 2 for BMI	
	Referred for consultant led care		✓	✓	✓
	Serial Growth scans		✓	✓	✓
	Anaesthetic alert			With co-morbidities	✓
	Screen for Obstructive Sleep Apnoea	All pregnant people with BMI ≥25			
Intrapartum care	V scan	✓	✓	✓	✓
	Can choose MLBU (if no other contraindications)	✓			
	Inform on call anaesthetist			✓	✓
	I.V. access		✓	✓	+VBG for bicarb
	Active management 3rd stage	✓	✓	✓	✓

1. Introduction

1.1. Rationale

Obesity is the most commonly occurring risk factor in pregnancy. It is associated with an increased risk of miscarriage, fetal congenital anomaly, thromboembolism, gestational diabetes, pre-eclampsia, dysfunctional labour, postpartum haemorrhage, wound infections, stillbirth and neonatal death. There is also a higher caesarean section rate in this group of pregnant people.

There are three different classes of obesity:

- BMI 30.0–34.99 (Class I);
- BMI 35.0–39.99 (Class 2);
- BMI 40 and over (Class 3)

While the majority of the recommendations within this guideline pertain to pregnant people with a BMI ≥ 30 kg/m2, some recommendations are specific to higher classes of obesity only. Obese pregnant people with a BMI below the threshold specified may also benefit from particular recommendations.

1.2. Objective

The aim is to provide evidence-based guidelines for medical and midwifery staff involved in the care of overweight and obese pregnant people during pregnancy and labour.

1.3. Scope

Patients booking in pregnancy with a BMI≥30 at the Norfolk and Norwich University Hospital.

1.4. Glossary

The following terms and abbreviations have been used within this document:

Term	Definition
BMI	Body mass index, a measure of weight to height ratio
MLBU	Midwife Led Birth Unit
OSA	Obstructive sleep apnoea
POGTT	Pregnancy Oral Glucose Tolerance Test
VTE	Venous thromboembolism
SFH	Standardised Fundal Height
VBAC	Vaginal birth after Caesarean
RCOG	Royal College of Obstetricians and Gynaecologists
NICE	National Institute for Health and Care Excellence
NMCP	Nursing, Midwifery and Clinical Professionals
PPH	Post partum haemorrhage
EIA	Equality Impact Assessment

2. Responsibilities

Community midwifery team – refer all pregnant people with a BMI≥35 for consultant led care and perform other aspects of the guideline for pregnant people with a BMI 30-35

Hospital midwifery team – to carry out all aspects of the guideline while pregnant people are inpatients

Hospital obstetric team – to carry out all aspects of the guideline

3. Processes to be followed

3.1. Preconception care

In a primary care setting, pregnant people of a childbearing age with BMI ≥30 kg/m2 should:

- Be advised and supported to reduce weight before conception and between pregnancies to reduce pregnancy complications. Weight and BMI should be measured to encourage this.
- Receive information about risks of obesity in pregnancy
- Be informed weight loss between pregnancies reduces the risk of stillbirth, hypertensive complications, and fetal macrosomia, and increases the chances of successful vaginal birth after caesarean section (VBAC).
- Be advised to take 5mg of folic acid daily starting at least 1 month before conception and to continue through the first trimester.

3.2. Antenatal care

During pregnancy, pregnant people with a booking BMI ≥30 kg/m^2 should:

- Have their height and weight measured and BMI calculated at their booking appointment.
- Be advised by her community midwife (CMW) to take 10 micrograms Vitamin D supplementation daily during pregnancy and while breastfeeding. This is most easily available in a pregnancy multivitamin.
- Screening for Obstructive Sleep Apnoea (OSA) should also be performed at booking using the following tool:

OSA scoring system	
Wake up unrefreshed from a night sleep	1
BMI more than 25kg/m^2	1
Snoring almost every night	1
Inappropriate daytime sleepiness (while talking to people or eating)	1

Score of ≥3 (which must include a BMI≥30 kg/m^2) correlates to a 60% chance of OSA, requiring CPAP. Please refer anyone with a score ≥3 to Sleep Medicine.
If the patient has been referred to consultant led care, either for a BMI ≥35 or other reasons, the obstetric team should do this with a letter dictated to “Sleep Medicine” and marked as urgent.

If the patient does not need obstetric led care but scores ≥ 3, (BMI less than 35 and no other obstetric risk factors) then she does not need referral to the antenatal clinic to be referred to Sleep Medicine. The Sleep Medicine team will take direct referrals from community midwives via email (Philippe.grunstein@nnuh.nhs.uk) or via phone (extension 3455) – it is the responsibility of the referrer to check this referral has been actioned.

- Have a glucose tolerance test at the community midwife booking appointment and, if normal then, repeated between 24 and 28 weeks.
- Be risk assessed for venous thromboembolism (VTE) and Aspirin as per the prophylactic anticoagulation Trustdocs ID: 878 and hypertension guidelines Trustdocs ID: 887.
- Have the risks of obesity in pregnancy and labour discussed with them.
- Be screened for mental health problems by healthcare professionals seeing them as obese pregnant people are at a higher risk.
- Have a discussion about sensible eating in pregnancy (i.e. eating a healthy balanced diet) sensible weight gain in pregnancy, and be signposted to https://www.justonenorfolk.nhs.uk/healthylifestyless. Here there are links to healthy eating and activity in pregnancy and postpartum.
    - No nationally recognised standard for total weight gain during pregnancy for pregnant people who are obese exists. The American College of Obstetricians and Gynecologists uses the Institute of Medicine recommendations of gestational weight gain of 5-9kg with a BMI≥30. This can be used as a guide but does not differentiate between different classes of obesity due to lack of evidence. If an obese woman gains less weight than this, or even loses a small amount of weight in a controlled manner, but has a normally grown baby, there is no evidence to encourage weight gain to the 5-9kg recommendations. Currently, a focus on healthy eating rather than prescribed weight gain targets is more important. Anti-obesity or weight loss drugs are not recommended in pregnancy.
    - No specific referral to a dietitian is currently in place. In the view of this department a single review by a dietitian is unlikely to make the significant changes to lifestyle required to lose significant weight long term and will not significantly affect risks in this pregnancy. We also do not have the funding required for this.
- Have a Pressure Ulcer Risk Assessment tool performed within 2 hours of admission to a maternity ward to consider tissue viability issues.
- Have blood pressure checked using a large sphygmomanometer cuff if the upper arm circumference is more than 33 cm. These must be available to all community staff.
- Be referred for consultant led care if **BMI ≥35** (in the specialist obesity clinic on Wednesday morning unless other more significant risk factors exist):
    - These pregnant people will need serial scans for fetal growth every 4 weeks. If they have additional risk factors for fetal growth restriction i.e.

previous SGA these will commence from 28 weeks, otherwise they will be from 32 weeks gestation onwards.

- Standardised fundal height (SFH) should be measured by Community Midwife at 28 weeks gestation:

a.i. Referral for USS Growth at this stage is only required if SFH plot on personalized GROW chart suggests small for gestational age (i.e. <10th centile).

a.ii. If SFH suggests large for gestational age (i.e. >90th centile), and routine 28 week POGTT is normal (or the result is not back but has been taken), routine serial USS can start from 32 weeks as above and additional USS at 28 weeks is not required. If POGTT is abnormal, these patients will be identified and seen within Gestational Diabetes ANC.

- At booking appointment, if the woman does not need to return to antenatal clinic for other reasons, she can be put on the "intermediate pathway" (appendix 1) where the sonographer can discharge the woman without the need for an obstetric review if the scan is normal.

- Have an anaesthetic alert sent if **BMI ≥45 or BMI ≥40 in the presence of co-morbidities.** Comorbidities may include history of diabetes, cardiac disease, smoking or obstructive sleep apnoea (OSA).
- If admitted as an inpatient, VTE prophylaxis (mechanical and medical) is required unless contraindicated (see VTE guideline Trustdocs ID: 878). Plus size TEDs, which fit ankle size up to 35cm, are available. If this is not big enough, the use the Flotron boots from theatre may be considered.
- Ensure that pregnant people with a BMI>30 are aware of the symptoms and signs of heart disease (e.g. chest pain, dyspnoea, orthopnoea) as well as those of venous thromboembolism (e.g. sudden painful and swollen leg, dypnoea, chest pain)

3.3. Management after Bariatric Surgery

Patients with a history of bariatric surgery are also classified as high-risk pregnancies. Important considerations of their care include nutritional support and overcoming difficulties of diagnosing Gestational Diabetes.

It is recommended:

- A minimum of 12-18 months is recommended before trying for a pregnancy. This is to allow stabilisation of body weight and correction of nutritional deficiencies. This advice is especially important as pregnant people who lose significant weight are more likely to fall pregnant quicker.
- These pregnant people should be seen in the specialist consultant led obesity clinic (Wednesday morning).
- To screen for **nutritional deficiencies** at booking and every trimester as a minimum. This can be requested on ICE using the "post bariatric patient annual review" profile (found by searching for "bariatric" on ICE requests).

This requests: FBC, U/Es, LFTs, Bone profile, Fasting lipids, Glucose, TSH, Free T4, HbA1c, Vitamin D and A, APTH, Ferritin, folate and Vitamin 12, Zinc, Copper, Selenium, Magnesium

- Patients following bariatric surgery should already be established on **Vitamin B12 replacement** (via 3-monthly injections). If a patient is not already receiving this, please correspond with their GP to arrange replacement throughout pregnancy and continued outside of pregnancy.
- All patients should also be receiving a **Multivitamin**. Please ensure this is a Pregnancy specific multivitamin which includes Vitamin D.
- Remaining specific deficiencies identified on screening should be treated accordingly.
- Be aware reference ranges for nutritional deficiencies can be different in the pregnant and non pregnant population. Ranges are available here: Normal Reference Ranges and Laboratory Values In Pregnancy (perinatology.com)
- Common nutritional abnormalities and their treatments are:
    i. Iron – to be replaced as per routine guidance in the NNUH Management of Antenatal and Postnatal Maternal Anaemia guideline
    ii. Zinc – to be replaced with Solvazinc 125 mg tablets twice daily for 3 months followed by a repeat zinc level
    iii. Copper – Note the trimester specific ranges on Perinatology.com above. High copper levels in pregnancy are relatively common and if the serum ceruloplasmin is also raised, you can be reassured this is normal for pregnancy.

- Patients who have had bariatric surgery should already be under Tier 3 Weight management services:
    - If this is not the case, please ensure correspondence is sent to the GP for referral to be made.
    - If patients are already under the care of a Tier 3 Weight management team, please ensure the service is aware of the pregnancy.
    - General nutritional advice should be given to these patients and recommendation to aim generally for Protein intake 60g/day with replacement of rapidly absorbed carbohydrates with protein or low GI alternatives.

3.4. Induction of Labour

Although not routinely offered; for pregnant people with BMI ≥35 latest RCOG guidance suggests elective induction of labour at term may reduce the chance of requiring intervention such as Caesarean section:

- In the absence of other risk factors, induction of labour can therefore be considered on an individual basis from 39 weeks gestation if the patient

wishes. This should be following a detailed discussion with the patient regarding the risks and benefits of induction of labour. The benefits will include a lower Caesarean sections rate, but the risks will include medicalization of the labour, higher use of epidural and longer time spent in hospital, when time for induction as well as delivery and postnatal care is included.

- Induction of labour should be considered in other circumstances for these patients such as macrosomia.

3.5. Intrapartum Care

On admission for induction or in labour, pregnant people with a booking BMI ≥30 should:

- Have a V scan to check presentation (as is the hospital policy for all pregnant people)
- Be looked after as per routine care in the second stage if they have normal mobility. However, if they have reduced mobility, consideration should be made to the lateral position in the second stage of labour.
- If booking **BMI ≥35**, we recommend delivering on delivery suite and not MLBU due to the risk of PPH (NICE Intrapartum Care)
- Labour and deliver on delivery suite (as opposed to MLBU) if **BMI ≥40** on admission, **irrespective of booking BMI.**
- Be discussed with the on-call anaesthetist if **BMI ≥40** on admission, especially if they have not been seen antenatally.
- Have I.V. access if **BMI ≥35** on admission with at least one cannula.
    - In addition a venous blood gas should be performed for patients with BMI **≥45,** to quantify bicarbonate level and identify those patients at risk of OSA. If Bicarbonate is >28 please inform On-call Obstetric Anaesthetist.
- Have consideration about the need for epidural. Early epidural, although not routine, may be recommended, and if so consideration should be given to placement before active labour. In this situation the epidural can be sited and not fully topped up until needed.
- Have consideration made to access at Caesarean section. The Alexis retractor can be used to aid this. The use of this should be guided by the distribution of weight and the abdominal panniculus, but is not normally needed unless the BMI is ≥50. When using the Alexis, the pink maternity specific version should be used (kept in Obstetric theatres).
- If having a C/S, have the subcutaneous tissue space closed if the subcutaneous fat layer is ≥2cm.
- Have active management of the third stage.

3.6. Postnatal Care

After giving birth, pregnant people with a booking BMI ≥30 should:

- Be encouraged to mobilise early
- Have a full VTE risk assessment. While admitted as an inpatient, TEDS should be used with or without low molecular weight heparin, depending on VTE score, unless contraindicated (see VTE guideline Trustdocs ID: 878). Plus size TEDs, which fit ankle size up to 35cm, are available. If this is not big enough, the use the Flotron boots from theatre may be considered.
- Have contraception discussed with them prior to discharge. This needs to include the risk of VTE with the combined pill, and advice to use a long-term contraceptive to allow weight loss between pregnancies.
- Continue to offer nutritional advice from community GP services with referral to Weight management services as appropriate.
- Have appropriate postnatal follow-up when diagnosed with Gestational diabetes.

3.7. Equipment limits

These are weight limits, and although weight may be safe, the width of some equipment may not be large enough, and this must be taken into account.

- Wheelchairs
  - All wheelchairs <190kg
  - Bariatric porters chair <380kg
- Scales
  - Cley / Delivery suite < 200kg
  - Wheelchair platforms available in Jack Pryor Unit or via Site Ops out of hours
  - Bed scales available in General Medicine outpatients Level 3 East, Critical Care Complex or via Site Ops
- Beds / couches
  - Antenatal clinic couches <225kg.
  - Cley / Blakeney– HilRom beds <250kg
  - Delivery suite
    - HilRom beds <227kg.
    - Bereavement room <400kg
  - MMAU couches – <260kg
- Mattresses
  - Cley / Blakeney <190kg
  - Delivery suite <248kg
- Hoist – Oxford Presence Hoist <227kg – available on Cley, Jack Pryor Unit and Gunthorpe Ward

- Patient flat lift kit (if patient falls) – available via Health and Safety Team (Ex 5406) or Site Ops out of hours – Weight limit 500Kg
- Toilet (in the bathroom) – 190kg. Bariatric commodes are available via 1st Call Mobility
- Gowns – plus sized gowns are available in a labelled box in the linen cupboard on delivery suite
- CTG straps – straps can be joined together with white poppers if extra length is needed
- If extra equipment is needed, contact 1st Call Mobility **(available 24 hours)**:
    - www.1stcallmobility.co.uk
    - 01279 425648

Please also refer to Trust Policy on Manual Handling Operations - Moving and Handling Trustdocs ID: 582

4. Related Documents

- Manual Handling Operations - Moving and Handling – Trust Docs ID: 582
- Prophylactic Anticoagulation in Pregnancy – Trust Docs ID: 878
- Management of Pre-Eclampsia and Hypertensive Disorders in Pregnancy - Trust Docs ID: 887.
- Management of Antenatal and Postnatal Maternal; Anaemia – Trust Docs ID 16043

5. References

- RCOG. Care of women with obesity in pregnancy. November 2018
- American College of Obstetricians and Gynecologists. Committee Opinion Weight Gain During Pregnancy. January 2013
- NICE. Intrapartum care for healthy women and babies. September 2023
- NICE. Intrapartum care for women with existing medical conditions or obstetric complications and their babies. March 2019

6. Monitoring Compliance

Compliance with the process will be monitored through the following:

Key elements	Process for Monitoring	By Whom (Individual / group /committee)	Responsible Governance Committee /dept	Frequency of monitoring
Fetal monitoring in labour	Weekly intrapartum case reviews	Fetal monitoring team	Maternity	Weekly

The audit results are to be discussed at relevant governance meetings to review the results and recommendations for further action. Then sent to Women's and Childrens Divisional Board who will ensure that the actions and recommendations are suitable and sufficient.

Appendix 1: Intermediate Pathway for maternity patients with a BMI ≥35 needing serial scans

7. Equality Impact Assessment (EIA)

Type of function or policy	Existing

Division	Women's and Children's	**Department**	Obstetrics
Name of person completing form	Charles Bircher	**Date**	24/01/23

Equality Area	Potential Negative Impact	Impact Positive Impact	Which groups are affected	Full Impact Assessment Required YES/NO
Race	No	No		No
Pregnancy & Maternity	No	No		No
Disability	No	No		No
Religion and beliefs	No	No		No
Sex	No	No		No
Gender reassignment	No	No		No
Sexual Orientation	No	No		No
Age	No	No		No
Marriage & Civil Partnership	No	No		No
EDS2 – How does this change impact the Equality and Diversity Strategic plan (contact HR or see EDS2 plan)?		It does not		

- **A full assessment will only be required if: The impact is potentially discriminatory under the general equality duty**
- **Any groups of patients/staff/visitors or communities could be potentially disadvantaged by the policy or function/service**
- **The policy or function/service is assessed to be of high significance**

IF IN DOUBT A FULL IMPACT ASSESSMENT FORM IS REQUIRED

The review of the existing policy re-affirms the rights of all groups and clarifies the individual, managerial and organisational responsibilities in line with statutory and best practice guidance.