



Guideline for Pregnancy Following Bariatric Surgery

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Section Headings

1.0 Introduction

The prevalence of obesity in the general population in the UK has significantly increased since the early 1990's, rising from 15% of the population in 1993 to 28% in 2019 (Baker, 2022). As a result, the prevalence of obesity in pregnancy has also increased, with almost one in five pregnant women having a BMI ≥ 30 kg/m² at booking (Denison *et al.*, 2018).

Bariatric surgery is becoming increasingly common. According to NICE guidelines, bariatric surgery may be offered to patients with class III obesity (BMI ≥ 40 kg/m²) where lifestyle and/or medications have been ineffective at achieving weight reduction; or class II obesity (BMI 35 – 40 kg/m²) with associated co-morbidities ([NICE, 2014 Obesity: identification, assessment and management](#)). Bariatric surgery may be restrictive, aiming to reduce calorie intake by reducing gastric capacity, and/or malabsorptive. Restrictive procedures include laparoscopic adjustable gastric banding (LAGB) and laparoscopic sleeve gastrectomy. Laparoscopic Roux-en-Y gastric bypass (RYGB) is both a restrictive and malabsorptive procedure.

2.0 Objective

Approximately 80% of patients who undergo bariatric surgery are women, many of whom are of child-bearing age (Shawe *et al.*, 2019). As bariatric surgery has been shown to improve fertility, pregnancies after bariatric surgery are becoming increasingly common (Khan *et al.*, 2013). With increasing numbers of women becoming pregnant following bariatric surgery, it is important for clinicians to recognise the risks posed during pregnancy as timely recognition is associated with reduced risk of adverse maternal and fetal outcomes.

Although rare, maternal bariatric post-operative complications can occur during pregnancy and include (Maggard *et al.*, 2008):

- Malabsorption syndromes
- Gastric dumping
- Bowel obstruction due to internal herniation
- Anastomotic ulceration and breakdown
- Gastric band slippage and migration
- Gastric band leakage

Fetal risks include:

- Small for gestational age (SGA) and intrauterine growth restriction
- Preterm birth
- Congenital abnormalities
- Perinatal mortality

In the MBRRACE 2020 report, two women who died had perforations of their bowel at the site of the anastomosis from a gastric bypass (Knight *et al.*, 2020). Correct diagnosis can be difficult as the symptoms of epigastric pain and vomiting can be common in pregnant women. However, a careful history and examination must be carried out for any woman attending with abdominal pain and a history of bariatric surgery (Khan *et al.*, 2013).

The purpose of this guideline is to provide evidence-based recommendations on the optimal care and nutritional management in pregnancy after bariatric surgery.

3.0 Scope

This guideline applies to all medical nursing and midwifery staff who care for pregnant women following bariatric surgery

4.0 Recommendations

4.1 Timing of pregnancy

- A minimum waiting period of 12 – 18 months after bariatric surgery is recommended before attempting pregnancy to allow stabilisation of body weight and to allow the correct identification and treatment of any possible nutritional deficiencies that may not be evident during the first months (Denison *et al.*, 2018).
- Patients trying for a pregnancy following bariatric surgery need to be on Folic acid 5mg once daily to prevent neural tube defects.

4.2 Antenatal care

- All women with a history of bariatric surgery should have consultant led antenatal care (Denison *et al.*, 2018).
- All clinicians must complete the 'Pregnancy following bariatric surgery' Proforma at booking appointment and it should be filed with their antenatal notes
- All woman with a history of bariatric surgery should be referred to a dietitian for advice regarding their specialised nutritional needs (Denison *et al.*, 2018).
- Women who fit the criteria for referral to the Tier 3 Weight Management Service should be offered this at booking.
- Currently there is no specialist bariatric dietitian at Barnsley. Women who remain under the care of a bariatric dietitian should contact them immediately and inform them of their pregnancy so that they can be given advice and further management during their pregnancy (Chelsea and Westminster Hospital NHS Foundation Trust, 2022).
- Emotional support should be offered throughout the pregnancy if required

4.3 Nutritional advice, monitoring and supplementations

- Pregnancy should be planned and nutritional supplementation should be optimised preferably for three to six months prior to conception (Shawe *et al.*, 2019)
- All women with a history of bariatric surgery should have nutritional surveillance and screening for deficiencies during pregnancy as follows: (Denison *et al.*, 2018; Shawe *et al.*, 2019)

Check in each trimester	Check every 6 months
<ul style="list-style-type: none"> • FBC • Ferritin • Folate • Vitamin B12 	<ul style="list-style-type: none"> • Coagulation profile • Electrolytes (U&E, magnesium, phosphate, calcium, Vitamin D, parathyroid hormone) • Liver function test

- Vitamin and mineral supplementations during pregnancy following bariatric surgery is recommended (Chelsea and Westminster Hospital NHS Foundation Trust, 2022). These include:
 - Multivitamin and mineral supplements (e.g. Pregnacare)
 - Folic acid 5mg once daily
 - Vitamins D3 3000 IU once daily
 - Calcium tablets* (e.g. Adcal D3 or Calcichew D3)
 - Iron tablets*
 - Vitamin B12* 1mg IM injections every 3 months

* Calcium, Iron and Vitamin B12 supplements are not required following laparoscopic adjustable gastric banding (LAGB)

4.4 Ultrasound monitoring of fetal growth and anomalies

- Most types of bariatric surgery have been found to double the risk of fetal growth restriction (FGR) and SGA in comparison with BMI-matched women and women with obesity (Shawe *et al.*, 2019)
- Monthly ultrasound monitoring of fetal growth should be offered to all women with a history of bariatric surgery from 28 weeks gestation (Shawe *et al.*, 2019)

4.5 Assessment and prevention of medical complications

- During pregnancy, women with a history of bariatric surgery should routinely be screened for gestational diabetes mellitus (GDM) (Shawe *et al.*, 2019)
- Women with a history of bariatric surgery with risk factors for GDM are unable to have full OGTT test due to risks of dumping syndrome and therefore will require referral to the diabetes specialist midwife to arrange screening for gestational diabetes:
 - Fasting **venous** blood sugar is taken
 - Patients are shown how to check blood sugars using a fingerprick test
 - Blood sugars are monitored for one week between 24+0 and 28+0 weeks; or earlier if required - depending on risk factors
 - During this week, blood sugar readings are recorded 4 times per day: fasting and one hour after each meal
 - The results of this monitoring are reviewed by the Diabetes Specialist Midwife one week later
 - If blood sugars are abnormal, the patient will be referred into the diabetes antenatal clinic immediately. Care and treatment should be as per the diabetic guideline

4.6 Adjustable gastric banding patients

- Women who have undergone a gastric band insertion may experience an increase in nausea, vomiting, intolerance to foods and abdominal pain if the band is not adjusted appropriately. Excessive vomiting may increase the risk of band slippage and migration.
- Patients with a gastric band will need to contact their specialist bariatric surgical team to discuss whether their band needs be adjusted during pregnancy

4.7 Postnatal care

- Gastric bypass surgery is regarded as a relative contraindication to NSAIDS in the postnatal period (Knight *et al.*, 2020)
- Adequate pain relief and early mobilisation can be an effective means of reducing VTE risk alongside adequate thromboprophylaxis
- Follow up with a dietitian can help to ensure they follow a healthy diet and can guide future weight loss
- Postnatal contraception should be considered and discussed with the patient prior to discharge. The choice of contraception should be guided by patient choice and according to the Faculty of Sexual and Reproductive Healthcare guidelines (FSRH, 2019)
- Both gastric bypass and sleeve gastrectomy alter the anatomical structure of the gastrointestinal tract which can affect the absorption of oral contraceptives containing an oestrogen component. Therefore, combined oral contraception should be avoided after bariatric surgery, and the use of long-acting reversible contraception (LARC) should be encouraged and offered as first line following bariatric surgery (Shawe *et al.*, 2019)



5.0 Roles and responsibilities

5.1 Midwives

- To provide the best evidence-based care for women with a history of bariatric surgery in accordance with this guideline throughout the antenatal, intrapartum and postnatal period.
- To identify patients with a history of bariatric surgery at first contact and refer them to the appropriate consultant led clinic for a booking appointment
- To escalate early if any concerns/questions from the women which she is not trained to advise on to maintain safe practice

5.2 Obstetricians

- To provide the best evidence-based care for women with a history of bariatric surgery in accordance with this guideline throughout the antenatal, intrapartum and postnatal period.
- To work as part of a multidisciplinary team in planning care for women with a history of bariatric surgery including midwives, dietitians and anaesthetists.
- To refer patients with a BMI >45 for anaesthetic review
- To refer patients with a BMI >50 to the multi-disciplinary team to ensure safe management of women

5.3 Anaesthetists

- To work in collaboration with obstetricians and midwives as part of the multidisciplinary team when providing care for women with a history of bariatric surgery
- To attend multidisciplinary team meetings for high risk patients with a raised BMI who may require an individualised management plan during the intrapartum period
- To attend when their presence is requested and provide analgesia/anaesthesia to the women for operations and procedures as appropriate.

6.0 Associated documents and references

Baker, C. (2022) 'Obesity Statistics', *Commons Library Research Briefing*, (03336), pp. 1–22. doi: 10.1016/j.pop.2015.10.001.

Chelsea and Westminster Hospital NHS Foundation Trust (2022) *Pregnancy after Bariatric Surgery, Bariatric dietetics patient leaflets*. Available at: <https://www.chelwest.nhs.uk/your-visit/patient-leaflets/bariatric-dietetics/pregnancy-after-bariatric-surgery> (Accessed: 18 April 2022).

Denison, F. C. *et al.* (2018) 'Care of Women with Obesity in Pregnancy: Green-top Guideline No. 72', *BJOG: An International Journal of Obstetrics and Gynaecology*, 126(3), pp. e62–e106. doi: 10.1111/1471-0528.15386.

FSRH (2019) 'Uk Medical Eligibility Criteria For Contraceptive Use | UKMEC 2016', 2016, pp. 1–170. Available at: <https://www.fsrh.org/standards-and-guidance/documents/ukmec-2016/>.

Khan, R., Dawlatly, B. and Chappatte, O. (2013) 'Pregnancy outcome following bariatric surgery', *The Obstetrician & Gynaecologist*, 15(1), pp. 37–43. doi: 10.1111/j.1744-4667.2012.00142.x.

Knight, M. *et al.* (2020) *Saving lives, improving mother's care: Lessons learned to inform maternity care from the UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidity 2016-18, MBRRACE-UK*.



Maggard, M. A. *et al.* (2008) 'Pregnancy and Fertility Following Bariatric Surgery A Systematic Review Melinda', *Journal of the American Medical Association*, 300(19), pp. 2286–2296.

NICE (2014) *Obesity: identification, assessment and management, NICE Guidance*. Available at: <https://www.nice.org.uk/guidance/cg189/chapter/1-recommendations#surgical-interventions> (Accessed: 18 April 2022).

Shawe, J. *et al.* (2019) 'Pregnancy after bariatric surgery: Consensus recommendations for periconception, antenatal and postnatal care', *Obesity Reviews*, 20(11), pp. 1507–1522. doi: 10.1111/obr.12927.

7.0 Training and resources

Training will be delivered as outlined in the Maternity Training Needs Analysis. This is updated on an annual basis.

8.0 Monitoring and audit

Any adverse incidents relating to the guideline for pregnancy following bariatric surgery will be monitored via the incident reporting system. Any problems will be actioned via the case review and root cause analysis action plans. The action plans are monitored by the risk midwife to ensure that improvements in care are made.

The trends and any root cause analysis are discussed at the monthly risk meetings to ensure that appropriate action has been taken to maintain safety.

The guideline for pregnancy following bariatric surgery will be audited in line with the annual audit programme, as agreed by the CBU. The audit action plan will be reviewed at the monthly risk management meetings on a quarterly basis and monitored by the risk midwife to ensure that improvements in care are made.

9.0 Equality and Diversity

This section is mandatory for all Trust Approved Documents and must include the statement below:

The Trust is committed to an environment that promotes equality and embraces diversity in its performance as an employer and service provider. It will adhere to legal and performance requirements and will mainstream equality, diversity and inclusion principles through its policies, procedures and processes. This guideline should be implemented with due regard to this commitment.

To ensure that the implementation of this guideline does not have an adverse impact in response to the requirements of the Equality Act 2010 this policy has been screened for relevance during the policy development process and a full equality impact assessment is conducted where necessary prior to consultation. The Trust will take remedial action when necessary to address any unexpected or unwarranted disparities and monitor practice to ensure that this policy is fairly implemented.

This guideline can be made available in alternative formats on request including large print, Braille, moon, audio, and different languages. To arrange this please refer to the Trust translation and interpretation policy in the first instance.



The Trust will endeavor to make reasonable adjustments to accommodate any employee/patient with particular equality, diversity and inclusion requirements in implementing this guideline. This may include accessibility of meeting/appointment venues, providing translation, arranging an interpreter to attend appointments/meetings, extending policy timeframes to enable translation to be undertaken, or assistance with formulating any written statements.

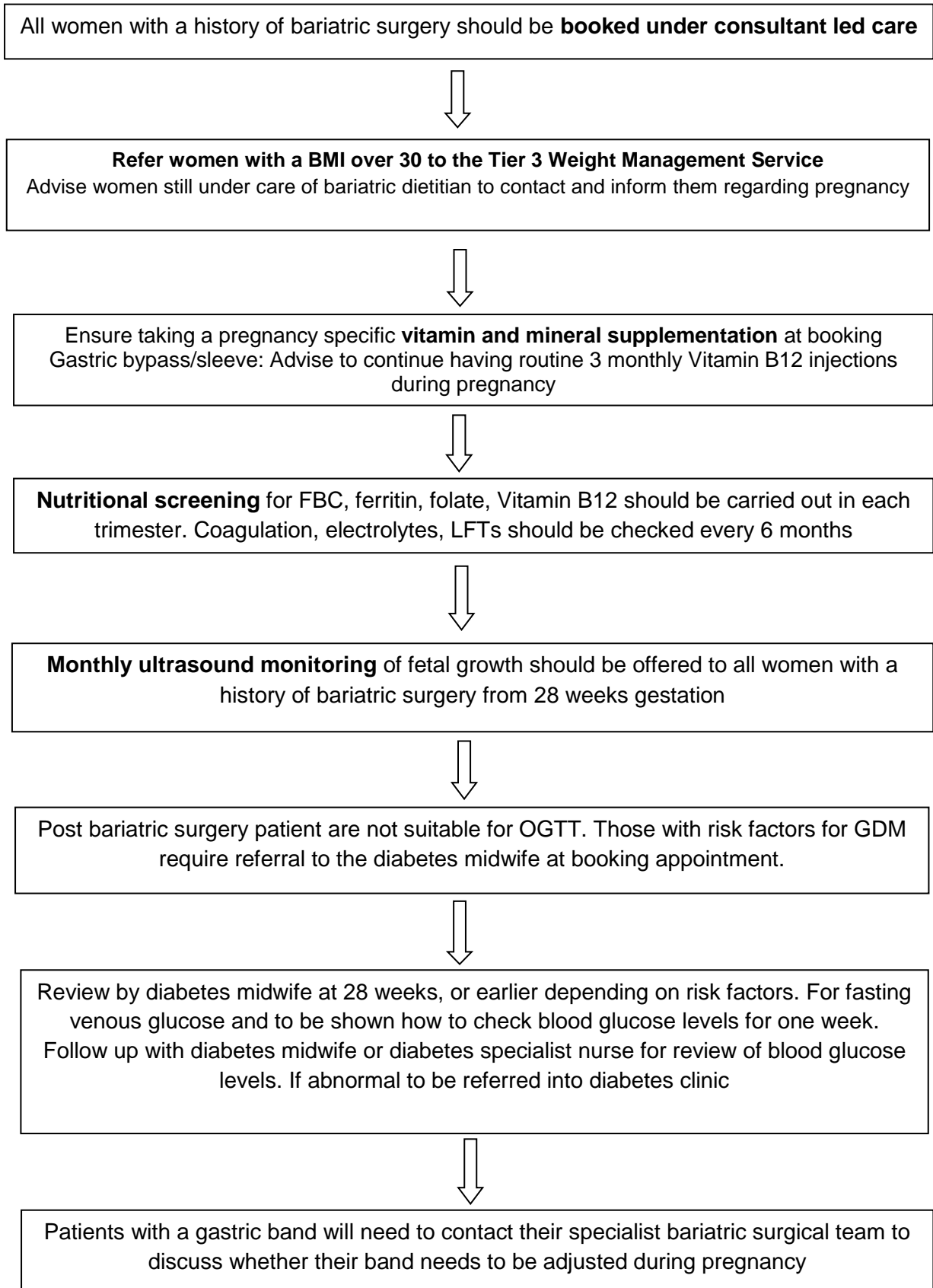
9.1 Recording and Monitoring of Equality & Diversity

This section is mandatory for all Trust Approved Documents and must include the statement below:

The Trust understands the business case for equality, diversity and inclusion and will make sure that this is translated into practice. Accordingly, all guidelines will be monitored to ensure their effectiveness.

Monitoring information will be collated, analysed and published on an annual basis as part of Equality Delivery System. The monitoring will cover the nine protected characteristics and will meet statutory employment duties under the Equality Act 2010. Where adverse impact is identified through the monitoring process the Trust will investigate and take corrective action to mitigate and prevent any negative impact.

Bariatric Careflow





Appendix 2 - Glossary of terms

BMI: Body mass index
 FBC: Full blood count
 FGR: Fetal growth restriction
 GDM: Gestational diabetes mellitus
 IM: Intramuscular
 IU: International units
 LAGB: Laparoscopic adjustable gastric banding
 LARC: Long-acting reversible contraception
 LFT: Liver function test
 MBRRACE: Mothers and Babies Reducing Risk Through Audits and Confidential Enquiries
 NSAIDs: Non-steroidal anti-inflammatory drugs
 NICE: National Institute for Health and Care Excellence
 OGTT: Oral glucose tolerance test
 RCOG: Royal College of Obstetricians and Gynaecologists
 RYGB: Roux-en-Y gastric bypass
 SGA: Small for gestational age
 U&E: Urea and electrolytes
 VTE: Venous thromboembolism

Appendix 3 (must always be the last appendix)

Maintain a record of the document history, reviews and key changes made (including versions and dates)

Version	Date	Comments	Author

Review Process Prior to Ratification:

Name of Group/Department/Committee	Date
Reviewed by Maternity Guideline Group	
Reviewed at Women’s Business and Governance meeting	
Approved by CBU 3 Overarching Governance Meeting	
Approved at Trust Clinical Guidelines Group	
Approved at Medicines Management Committee (if document relates to medicines)	N/A



Trust Approved Documents (policies, clinical guidelines and procedures)

Approval Form

Please complete the following information and attach to your document when submitting a policy, clinical guideline or procedure for approval.

Document type (policy, clinical guideline or procedure)	Guideline
Document title	Guideline for Pregnancy Following Bariatric Surgery
Document author (Job title and team)	Miyuki Omura (O&G ST1) Dr Fawzy (O&G Consultant) Dr Khanem (O&G Consultant) Kirstie Rickerby (Lead Midwife for Diabetes)
New or reviewed document	
List staff groups/departments consulted with during document development	
Approval recommended by (meeting and dates):	Women's Business and Governance 16/09/2022 CBU3 Business and Governance 28/09/2022
Date of next review (maximum 3 years)	28/09/2025
Key words for search criteria on intranet (max 10 words)	Raised BMI, gastric
Key messages for staff (consider changes from previous versions and any impact on patient safety)	
I confirm that this is the <u>FINAL</u> version of this document	Name: Molly Claydon Designation: Governance Support Co-ordinator

FOR COMPLETION BY THE CLINICAL GOVERNANCE TEAM

Approved by (group/committee): CBU3 Business and Governance
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