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Management of women with raised Body Mass Index >30kg/m^2 in Pregnancy

Introduction and Aim

Obesity in pregnancy is usually defined as a Body Mass index (BMI) of 30kg/m^2 or more at the first antenatal consultation. Obesity in pregnancy is associated with increased risk of serious adverse outcomes which are listed within this guideline.
This guideline covers interventions, preconception, during and after pregnancy.

Objectives

All women BMI > 30 have dietary advice at booking appointment.
All women with BMI >35kg/m^2 refer to Healthy Pregnancy Clinic at 16-18 weeks to discuss diet and lifestyle (this appointment may be carried out virtually)

- Women with BMI 30-34.9 kg/m^2 with **no co-morbidities** book MLC.
- Women with BMI 35-39.9 kg/m^2 with **no co-morbidities** book OLC and refer to Consultant Midwife Led Healthy Pregnancy Pathway.
- All women with BMI 30-39.9 kg/m^2 **with co-morbidities** book OLC
- All women with BMI > 40 kg/m^2 for book OLC.

Scope

All Staff working in maternity services throughout the Health Board.

Equality Health Impact Assessment	An Equality Health Impact Assessment (EHIA) has not been completed.
Documents to read alongside this Procedure	MLU guidelines
Approved by	Maternity Professional Forum

Accountable Executive or Clinical Board Director	Ruth Walker, Executive Nurse Director
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Disclaimer

If the review date of this document has passed please ensure that the version you are using is the most up to date either by contacting the document author or the Governance Directorate.

Summary of reviews/amendments

Version Number	**Date of Review Approved**	**Date Published**	**Summary of Amendments**
UHB 2		May 2011	

UHB 3		April 2014	
UHB 4		November 2016	
UHB 5		November 2017	Healthy Pregnancy Clinic pathway added for women with BMI 35 and over with no further co-morbidities.
UHB 6		May 2019	Changes to Healthy pregnancy clinic and pathway
UHB 6a		Oct 2020	Removed comment advising to stop clexane at 36 weeks for women on antenatal thromboprophylaxis. Removed thrombopoprophylaxis risk assessment forms – please refer to separate VTE Risk Assessment Guide
UHB 7	April 2021	March 2021	Re-named guideline to Management of woman with raised Body Mass index in pregnancy included recommendation from RCOG GTG 72 (2018) and Bariatric surgery.

When using this document please ensure that the version is the most up to date by checking on the Obstetrics & Gynaecology Guidelines on the UHB Clinical Portal.

PRINTED DOCUMENTS MUST NOT BE RELIED ON

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2 Introduction

The following evidence and care pathways have been developed to incorporate NICE CG190[1], RCOG GTG 72[2] guidance on the care of the obese pregnant woman.

Pregnancy has been identified as a significant factor in the development of obesity in women and women with high weight gain during pregnancy retain more weight at follow-up [3]. Obesity has been linked to an increased risk of complications during pregnancy and birth[4] including; pregnancy-induced hypertension, pre-term delivery, venous thromboembolism and caesarean section [5, 6].

Obesity is becoming increasingly prevalent in the UK population and has become one of the most commonly occurring risk factors for pregnancy, 21.3% of the antenatal population being obese and fewer than one half of pregnant women (47.3%) having a body mass index (BMI) within the normal range. Obesity in pregnancy is usually defined as a Body Mass index (BMI) of 30kg/m^2 or more at the first antenatal consultation. The World Health Organisation categorise obesity into Class 1, BMI 30-34.9kg/m^2 , Class II BMI 35-39.9 kg/m^2, Class III BMI over 40 kg/m^2 [7].

Evidence from the last MBRRACE report 2016 [8] is that 33% percent of women who died in were obese and 18% were overweight.

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3 Risks of Obesity in Pregnancy

3.1 Risks to Mother or Birthing Parent

Risks related to obesity in pregnancy [9,10]

For the mother, increased risks include:

- Spontaneous first trimester and recurrent miscarriage
- Pre-eclampsia
- Gestational diabetes
- Gestational hypertension
- Thromboembolism
- Dysfunctional/prolonged labour
- Anaesthetic complications
- Higher risk of bacterial and viral infections (Sepsis)
- Higher risk of caesarean section
- Post-caesarean wound infection
- Postpartum haemorrhage
- Low breastfeeding rates
- Cardiac disease
- Maternal death or severe morbidity

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3.2 Risks to Baby

For the baby increased risks include:

- Prematurity
- Fetal Macrosomia
- Increase risk of shoulder dystocia
- Small for gestation age
- Congenital abnormalities
- Stillbirth and neonatal death

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3.3 Risks: Further Information

There is no recent updated guidance on recommended weight gain in pregnancy, however the Institute of Medicine (2009)[11] state that women with BMI over 30 kg/m^2 should gain no more than between 5-9kg in pregnancy. Focus should be more around diet and lifestyle over weight gain RCOG GTG 72.

Maternal obesity is known to be an important risk factor for gestational diabetes with a number of large cohort studies reporting a three-fold increased risk compared with women of a healthy weight[12,13], NICE CG62[14] and NG 3[15]diabetes in pregnancy recommend OGTT at 28 weeks for women with obesity in pregnancy.

Maternal obesity is associated with an increased incidence of hypertensive disorders in pregnancy, pre-eclampsia, stillbirth, induction of labour, augmentation of labour and intrapartum caesarean section[16]. In addition, this group of women are also at increased risk of complications, including shoulder dystocia[4] have a higher prevalence of requesting additional analgesia in labour and postpartum haemorrhage (PPH) [17]

There is no evidence to support continuous Fetal monitoring during labour in the absence of other comorbidities, or medical or obstetric complications. NICE CG190 recommends that intermittent

Fetal heart monitoring should be offered to low-risk women in labour using the Pinnard stethoscope or Doppler ultrasound.

Evidence highlights that obese pregnant women are at increased risk of PPH, therefore active management should be recommended to women with maternal obesity, using prophylactic uterotonics for the management of the third stage reduces the chances of PPH in the obese woman.

RCOG GTG 72, Maternal obesity associated with lower initiation and continuation of breastfeeding rates due to delay in lactogensis, difficulty with positioning and attachment, therefore women should be informed of this and additional breastfeeding support offered.

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4 Recommendations

4.1 Obesity Class I (BMI 30-34.9kg/m^2)

Antenatal Care

- Women with obesity class 1 and no further co-morbidities book under Midwife led care (MLC). All other women book Obstetric led care (OLC).
- Complete thromboprophylaxis assessment (link to guidance).
- Measure Symphysis fundal height with a paper tape measure.
- Dietary advice to be given and women are to be advised about weight gain during pregnancy. Slimming World is suitable diet for pregnant mothers if they choose.
- OGTT at 28 weeks in addition to routine 28 week bloods, , or alternative GDM screening
- Where external palpation to assess fetal presentation and fetal auscultation is technically difficult refer to healthy pregnancy clinic at 36 weeks.
- All women Weigh at 36 weeks
- Birth choice discussion to be carried out with named community midwife or named obstetric lead around potential complications for birth associated with raised BMI.

Intrapartum

- In the absence of co-morbidities, non-complicated abdominal palpation and fetal auscultation with hand held Doppler device or Pinnard stethoscope, birth should be planned for Midwife led unit (MLU) with discussion around potential for transfer to Obstetric unit (OU) if any complications arise.

Postnatal

- Active 3rd stage is recommended for all classes due to increased likelihood of PPH.

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4.2 Obesity Class II – (BMI 35 – 39.9kg/m^2)

All women with BMI >35kg/m^2 refer to Healthy Pregnancy Clinic at 16-18 weeks to discuss diet and lifestyle (this appointment may be carried out virtually)

Antenatal.

- Booked as OLC
- Women with **no co-morbidities** book OLC and refer to Consultant Midwife Led Healthy Pregnancy Pathway.
- Advise folic acid supplement of 5mg for the 1st trimester, (signpost to GP)
- Complete thromboprophylaxis assessment as per guidance.
- Commence 150mg Aspirin if they also have another moderate risk factor for pre-eclampsia (as per Aspirin checklist).
- Healthy pregnancy consultation with midwife at 16-18 weeks to discuss healthy diet and lifestyle in pregnancy.
- OGTT at 28 weeks unless indicated earlier, or alternative GDM screening
- Serial Scans 28, 32, 36, 39 in line with GAP and GROW as well as interim community midwife appointments at 34 and 38 weeks and 40 weeks . Be aware of the increased margin of error in scan measurements with increased BMI
- Birth choices discussion at 36 weeks with Consultant midwife/senior Midwife to assess weight gain, ease of abdominal palpation and auscultation of FHR and Midwife led Anaesthetic assessment.

Intrapartum

- Primigravida: advise birth on Obstetric unit unless requesting birth on MLU/Home in which case refer to Birth choices at healthy pregnancy clinic at 36 weeks. BMI over 35 is not a reason for advising birth on OLU but further consideration of birth setting is required. For all women this should be an informed choice.
- Women with raised BMI AND comorbidities and asking to birth outside MLU guidance should be seen by Judith Cutter in first instance on the DAUOB40 list via ANC, if Judith unavailable then via birth choices by completing the referral form found here: http://nww.cardiffandvale.wales.nhs.uk/portal/page?_pageid=253,152943336,253_152943349&_dad=portal&_schema=PORTAL
- Multiparous: advise birth on MLU if no co-morbidities.
- Offer Stretch and sweep at 39 (Joint with HPC midwife sonographers) and 40 weeks (community midwife) and CMW to arrange IOL at 41 weeks.
- Ensure correct equipment is in place to care for women on the MLU, for example, delivery Beds that hold over 125kg in weight, pool evacuation nets, wide wheelchair and large BP cuff.
- If unable to auscultate Fetal Heart Rate (FHR) using IIA for transfer to OU for continuous monitoring, consider Fetal scalp electrode (FSE).

Postnatal

- Advise active 3rd stage.
- Complete VTE risk assessment
- Provide Breastfeeding support for positioning and attachment and advise daily vitamin D 10mcg if breastfeeding.

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4.3 Class III BMI >40 kg/m^2

All women with BMI >40kg/m^2 refer to Healthy Pregnancy Clinic at 16-18 weeks (booking midwife makes this first appointment on the DAUOB35 code) to discuss diet and lifestyle (this appointment may be carried out virtually)

Antenatal
To be booked consultant led care and birth on Obstetric Unit.

- Advise 5mg folic acid in 1st trimester to be initiated via the GP.
- Complete VTE assessment
- Commence 150mg Aspirin until 36 weeks.
- Healthy pregnancy consultation (virtual) with midwife at 16-18 weeks to discuss healthy diet and lifestyle in pregnancy, Provide patient information on risks associated with raised BMI and weight gain in pregnancy.
- Consultant review before 24 weeks.
- Discuss increased risks in pregnancy with obesity and measures to reduce these risks.
- Arrange OGTT at 28 weeks unless indicated earlier or alternative GDM screening
- Anaesthetic review at 32 weeks if:

1. **Primigravida**
2. **Multiparous with previous difficult regional anaesthetic or airway**
3. **Taking clexane**
4. **All $\geq$45**
5. **Women referred by midwife following midwife-led airway assessment**

- Serial Scans 28, 32, 36, 39 during obstetric clinic in line with GAP and GROW as well as interim community midwife appointments. Detail here.
- Be aware of the increased margin of error in scan measurements with increased BMI
- IOL by 41 weeks (RCOG GTG 72)

Intrapartum

- Advise birth on OU, women requesting birth outside of OU should be referred to consultant midwife in healthy pregnancy clinic for birth choice discussion and abdominal assessment for ease of palpation and auscultation of FHR at 36 weeks.
- Offer Stretch and sweep at 39 and 40 weeks and arrange IOL by 41 weeks.
- On admission, inform Consultant Obstetrician and Consultant Anaesthetist if BMI more than 45
- Ensure venous access early in labour
- Be aware or risk of shoulder dystocia at birth.
- Complete Waterlow assessment and provide pressure area care.
- Ensure correct equipment is in place to care for women on the MLU, for example, delivery Beds that hold over 125kg in weight, pool evacuation nets, wide wheelchair and large BP cuff.
- Continuous fetal monitoring in labour (may need FSE).
- If proceeding to Lower segment caesarean section (LSCS), Consultant Obstetrician to be informed and most senior obstetrician to perform LSCS.
- If require LSCS or Trial in theatre use appropriate bariatric theatre table (OU theatre can take up to 360kg).

Postnatal

- PICO negative pressure wound dressing to be considered on top of LSCS wound.
- Active management of 3rd stage consider prophylactic syntocinon 40iu/500mls/4hrs
- Commence PN clexane as per VTE assessment.
- Encourage early ambulation and good dehydration
- Provide Breastfeeding support for positioning and attachment and advise vitamin D 10mcg if breastfeeding.

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4.4 Summary of Recommendations

In summary:

All women with BMI >35kg/m^2 refer to Healthy Pregnancy Clinic at 16-18 weeks to discuss diet and lifestyle (this may appointment may be carried out virtually)

- Complete checklist
- Women with BMI 30-34.9 kg/m^2 with **no co-morbidities** book MLC.
- Women with BMI 35-39.9 kg/m^2 with **no co-morbidities** book OLC and refer to Consultant Midwife Led Healthy Pregnancy Pathway.
- All women with BMI 30-39.9 kg/m^2 **with co-morbidities** book OLC
- All women with BMI > 40 kg/m^2 f book OLC.
- Women with a BMI below 35 kg/m^2 who has an increased weight gain **does not** need to be referred to birth choices at healthy pregnancy clinic unless abdominal palpation and auscultation of the fetal heart is difficult. If a referral is necessary, book a HPC appointment at 36 weeks on the DAUOB40 list.

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5 Pregnancy after Bariatric Surgery

RCOG good practice point suggest pregnancies after bariatric surgery follow and OLC pathway. It is recommended that women wait at least 12-18 months before trying to conceive, even if BMI is I the normal range they are still at increased risk of anaemia, impaired OGTT and Small for gestational age babies. There are 4 commons methods for bariatric surgery see diagrams below.

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5.1 Recommendations for pregnancy:

- Book OLC
- Refer to virtual healthy pregnancy clinic – if required refer to dietetics.
- Folic acid 400micrograms (or 5mg if raised BMI) in first trimester.
- Take pregnancy specific vitamin and mineral supplement and as well as Iron supplementation in pregnancy
- Calcium/Vitamin D maintenance therapy.
- Nutritional screening every trimester, Ferritin, folate, Vitamin B12, calcium and fat soluble vitamins.
- GDM screening, avoid OGTT in those who have had a gastric bypass (risk of dumping syndrome). These women should have 4-7 days of blood sugar monitoring - (Check with diabetic nurse specialist details to arrange).
- For Serial growth scans
- Involve patients' surgical team for details of surgery and any specific advice.
- If BMI over 30 follow BMI pathways above.

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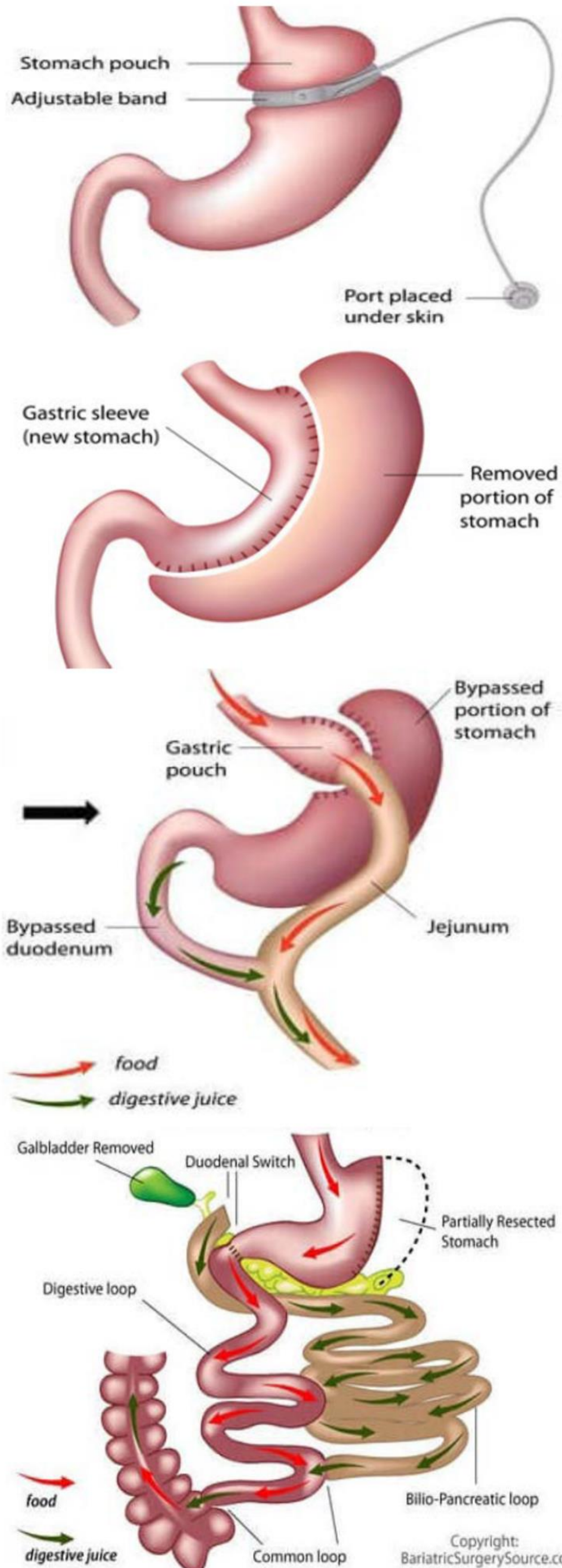
5.2 Common Bariatric Surgical Techniques

Images from Bariatric Surgery Source website: https://www.bariatric-surgery-source.com/types-of-bariatric-surgery.html#procedure



1. Gastric band (Restrictive):

Adjustable band around stomach to create a smaller stomach pouch.
In pregnancy may need band adjustments for appropriate weight gain and fetal health
Hyperemesis may be pathological and caused by an internal hernia or band slip

2. Sleeve gastrectomy (Restrictive):

A large part of the stomach is removed so it is much smaller than before.

3. Roux-en-Y gastric bypass (RYGB or RNY, Restrictive + Malabsorptive):
Surgical staples are used to create a small stomach pouch, which is connected to the small intestines, bypassing most of the stomach and the duodenum

- Risk of dumping syndrome (OGTT not suitable)
- Risk of nutritional deficiencies: e.g. iron, calcium fat-soluble vitamins (e.g. A, D, E) – usually absorbed in the duodenum. Also risks of protein, zinc and vitamin B12/ thiamine deficiencies

4. Biliopancreatic diversion with duodenal switch (BPD/ DS, Restrictive + Malabsorptive):
Sleeve gastrectomy + bypasses the majority of the small intestine
Higher surgical risks and risks of nutritional deficiencies (protein, vitamin, minerals).

- Risk of dumping syndrome (OGTT not suitable)

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7 Appendices

7.1 Antenatal Checklist: Raised BMI >30kg/m² in Pregnancy

Antenatal Checklist Raised BMI > 30kg/m² in Pregnancy

	Tick
BMI 30-34.9 kg/m² with no co-morbidities book MLC.	
BMI 35-39.9 kg/m² with **no co-morbidities** book CLC and refer to Consultant Midwife Led Healthy Pregnancy Pathway.	
BMI 30-39.9 kg/m² with co-morbidities book CLC (Consultant review before 24 weeks)	
BMI > 40 kg/m² for book CLC (Consultant review before 24 weeks)	
Complete thromboprophylaxis assessment	
Healthy pregnancy consultation at 16-18 weeks to discuss healthy diet and lifestyle in pregnancy (All women BMI >35)	
OGTT at 28 weeks unless indicated earlier (All) or alternative GDM screening	
Anaesthetic review at 32 weeks (BMI over 40) • >40 if: 1. Primigravida 2. Multiparous with previous difficult regional anaesthetic or airway 3. Taking clexane • All ≥45	
Serial Scans 28, 32, 36, 39 weeks (BMI over 35) as well as interim CMW appointments	
Women on healthy pregnancy pathway will have a birth choices appointment at HPC. Any CLC women requesting birth out of guidance refer to HPC by 36 weeks (DAUOB40 list)	
Induction of Labour by 41 weeks (BMI over 35).	

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