

Obesity in Maternity - Full Clinical Guideline

Reference No.: CL/02:23/B12

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1. Introduction

Maternal Obesity is recognised as an important risk factor for adverse outcomes in maternity care. Obesity has been shown to be associated with higher odds of maternal death in the UK with its effect primarily manifested through medical comorbidities (MBRRACE-UK Maternal report 2016).

2. Aim and Purpose

The aim is to minimise maternal and perinatal morbidity in a population known to be at a higher risk by recognising and addressing the risks, with a special focus on the peri-partum risk for those with a BMI ≥ 40 .

3. Abbreviations

ANC	-	Ante Natal Clinic
BMI	-	Body Mass Index
CLC	-	Consultant Led Care
CLU	-	Consultant Led Unit
CS/c-section	-	Caesarean Section
CTG	-	Cardio Toco Graphy
GDM	-	Gestational Diabetes Mellitus
GTT	-	Glucose Tolerance Test

HDU	-	High Dependency Unit
IA	-	Intermittent Auscultation
IOL	-	Induction of Labour
IUFD	-	Intra Uterine Fetal Death
IV	-	Intra Venous
LMWH	-	Low Molecular Weight Heparin
MHHR	-	Maternity Hand Held Records
MLU	-	Midwife Led Unit
NICE	-	National Institute Clinical Excellence
NICU	-	Neonatal Intensive Care Unit
PET	-	Pre Eclamptic Toxaemia
PPH	-	Post Partum Haemorrhage
SGA	-	Small for Gestational Age
VBAC	-	Vaginal Birth After Caesarean
VTE	-	Venous Thrombosis Embolism

4. **Measuring Weight, Height and BMI**

Pregnant women should have their weight and height measured and their BMI calculated:

- For all women at the first ante natal contact (booking appointment in early pregnancy)
- For women with BMI ≥ 30 at booking: additionally at 28 week antenatal contact
- For women with BMI ≥ 35 at 28 weeks: additionally around 34-37 week antenatal contact

BMI should be calculated based on measurement of weight and height by health care professional, not to rely on self-reported data. Consider the use of bariatric scales if weight exceeds limits. The definition of obesity recognises different levels as follows:

Overweight:	BMI ≥ 25
Preobese:	BMI 25.00-29.99
Obese class 1:	BMI 30-34.99
Obese class 2:	BMI 35-39.99
Obese class 3:	BMI ≥ 40

5. **Risks of Obesity**

Risks associated with obesity include:

Risks increased during pregnancy	Risks increased during labour and challenges	Risks increased after birth
<ul style="list-style-type: none"> • Gestational diabetes • Cardiac disease • (Recurrent) miscarriage • Undetected abnormalities due to limitations in ultrasound • Fetal congenital abnormalities including neural tube defects 	<ul style="list-style-type: none"> • Induction of labour • Caesarean section • Shoulder dystocia • Difficulties with analgesia • Anaesthetic complications • Difficult CS with greater morbidity and mortality • Slow progress in labour 	<ul style="list-style-type: none"> • Risks related to prematurity • Birth trauma related to macrosomia / shoulder dystocia • Baby increased risk of developing obesity and metabolic disorders in childhood

<ul style="list-style-type: none"> • Difficulties in accurate monitoring of fetal growth • Macrosomia 	<ul style="list-style-type: none"> • Reduced chance of successful VBAC • Postpartum haemorrhage 	<ul style="list-style-type: none"> • Higher admission to NICU rate • Lower breastfeeding rate • Neonatal death
<ul style="list-style-type: none"> • Difficulties with abdominal examinations • Difficulties with effective fetal monitoring • Prematurity • IUFD/stillbirth 		
<ul style="list-style-type: none"> • Thromboembolic disease (venous thromboembolism) • Hypertensive disorders and PET • Mental health problems • Infections: urinary tract, genital, wound, uterine • Difficulties with blood pressure assessment, venepuncture/i.v.access • Increased risk of maternal morbidity and mortality 		

Other than the increased risks, obese pregnant woman are more likely to experience and report the following during pregnancy:

- Headaches
- Constipation
- Sciatica
- Urinary tract infections
- Pruritis

6. **Antenatal Care for Obese Women**

The information in this guideline needs to be interpreted as additional guidance for pregnant women with an increased BMI at booking and is to be read in conjunction with other relevant clinical guidelines.

Obesity needs to be taken into consideration as a risk factor and appropriate guidelines to be followed such as:

- PET and aspirin advise
- VTE
- Diabetes
- Detection of SGA
- Tissue viability
- Mental health

Recommendations for all pregnant women with a booking BMI of ≥ 30 :

- Signpost to the patient information leaflet (Being overweight during pregnancy and birth) and/or supply a printed copy and point out:
 - Importance of increased dose of folic acid (5mg on GP prescription) in 1st trimester
 - Importance of supplementing with 10 μ g vit D during pregnancy and breast feeding (normal dose as found in Pregnacare)
 - Effect of diet and lifestyle intervention on improved birth outcomes and reduction of hypertension
 - All forms of screening for structural anomalies are more limited in obese pregnant women

- Screening for gestational diabetes (see diabetes guideline)
- Use appropriate size of cuff for blood pressure measurements
- Consider the use of TV ultrasound in women in whom it is difficult to obtain nuchal translucency measurements trans-abdominally
- In the absence of other obstetric or medical indications, obesity alone is not an indication for induction of labour
- Where macrosomia is suspected, induction of labour may be considered at 39 weeks
- Class 1 and 2 maternal obesity (BMI <40) when re-weighed, is not a reason in itself to be transferred to CLC if BMI was <35 at booking

Pregnant women with a gastric band regardless of BMI will need a consultant review.

6.1. Additional for women with BMI ≥ 35 at booking

- Serial assessment of fetal size using ultrasound
- Consultant led care

6.2. Additional for women with BMI ≥ 40 any time <30 weeks

- Obstetric team to refer to Anaesthetic Team

6.3. Pregnancy following bariatric surgery

Women with previous bariatric surgery:

- Should have consultant led antenatal care
- Should have nutritional surveillance and screening for deficiencies during pregnancy
- Should be referred to a dietician for advice with regard to their specialised nutritional needs.

7. Labour Planning during Pregnancy

A birth discussion should be completed by 37 weeks gestational age.

7.1 In case of a BMI < 40 at 34-37 weeks

Birth planning should be done by the community midwife.

Discussion to include:

- A normal birth should be encouraged
- Recommendations for fetal monitoring: intermittent auscultation should be offered during labour in the absence of other comorbidities, or medical or obstetric complications
- Advise active management of the 3rd stage
- Class 1 and 2 maternal obesity (BMI <40) at 34-37 weeks is not a reason in itself for advising birth within a CLU. The additional intrapartum risks and the additional care that can be provided in a CLU should be discussed with the woman so that she can make an informed choice about planned place of birth.
- Considerations for birth settings should be advised as follows:
 - If BMI at booking <35: all options may be offered including standalone MLC unit and home birth
 - If BMI at booking ≥ 35 : may be offered planned birth in a midwife led unit with an adjacent CLC unit and a neonatal intensive care unit

7.2 In case of a BMI \geq 40 at 34-37 weeks

An informed management plan for labour and delivery to be completed with the woman in Antenatal Clinic to include:

- A normal birth should be encouraged
- The option of induction of labour at 39 weeks should be discussed on an individual basis
- Record weight at the time of the consultation
- Venous access established at the onset of labour, advise about the possible technical difficulties of iv access
- Discuss incision site if CS needed
- Difficulty of fetal monitoring and advise CTG monitoring during labour
- Active management of third stage with regard to choice of drug and route of administration

Additional discussion / assessment to be considered:

- Consider need for senior medical involvement in case of c-section or instrumental delivery (obstetric and/or anaesthetist)
- Moving and handling risk assessment
- Health and safety and risk assessment of choices made especially when against best practice i.e. home/water birth (not recommended)
- Recommended doses for LMWH and antibiotics if required (see relevant clinical guidelines)
- Wound care related to perineum and abdominal wound
- Airway and apnoea assessment
- Advisability of early epidural

8. Intrapartum Care

The Clinical Risk assessment in Labour to include:

- BMI with information on gestational age at time when it was last calculated
- Tissue viability assessment: Plymouth score
- Fetal growth in pregnancy; signs of IUGR or macrosomia?

Additional for women with BMI \geq 40 (any time during pregnancy or on admission):

- Inform the obstetric registrar and anaesthetist covering the labour ward on admission to labour ward
- Any requirement for specific equipment e.g. in case of extremely high BMI/weight
- Consideration of additional measures to prevent pressure sores
- have venous access established early in labour and consideration should be given to siting a second cannula

Vigilance will be required in the second stage of a vaginal delivery owing to the increased risk of shoulder dystocia with bariatric pregnancies.

For obese women that wish to use the birthing pool the following needs to be taken into consideration:

- Monitoring of fetal wellbeing is essential and should not be compromised by use of the birthing pool at any stage
- The woman should be able to get in and out of the birthing pool with minimal assistance
- Use of the birthing pool is not recommended if weight \geq 100kg or BMI \geq 40.

8.1. Caesarean Section or Instrumental Delivery for women with BMI \geq 40

For women with BMI \geq 40 admitted to labour ward where c-section or operative intervention is anticipated:

- Update obstetric registrar and anaesthetist covering labour ward at the earliest opportunity

- Follow care plan and consider equipment to be used (i.e. large blood pressure cuffs, safe working loads of bed/operating table, slide sheets etc.)
- Consider using the Alexis O C-section retractor to maximise exposure and to maximise surgical efficiency by freeing up valuable hands of the first assistant. (Information and instructions for use (see Appendix B))

For women whose weight exceeds 120kg:

- Alert theatre staff including main theatre coordinator if a women is due to have an operative intervention in theatre

Read in conjunction with the Caesarean section clinical guideline.

9. **Postnatal Care**

Postnatal assessment of:

- VTE risk
- Tissue viability
- Obese women should be reminded of and signposted to the patient information leaflet. Alternatively a printed copy may be provided.

10. **Auditable Topics**

- Proportion of pregnant women who have a record of maternal height, weight and BMI in their maternity records.
- Proportion of women with class III obesity at booking who had an antenatal anaesthetic review.
- Proportion of women with class I obesity or greater at booking, plus two other risk factors for VTE, as outlined in RCOG GTG No. 37a, who had pharmacological thromboprophylaxis prescribed antenatally.
- Proportion of women with class III obesity at booking who had pharmacological thromboprophylaxis prescribed postnatally.
- Proportion of women with class I obesity or greater at booking who had a glucose tolerance test during pregnancy.
- Proportion of women with class I obesity or greater at booking who had active management of the third stage of labour.

11. **References**

Care of women with obesity in pregnancy. RCOG Green-top guideline No.27. November 2018. NICE accredited.

Antenatal Care. NICE guideline CG62. Feb 2017

Best Practice Standards of Care for Pregnant women with a raised BMI by the East Midlands Maternity Network. East Midlands Strategic Clinical Networks, June 2015

Appendix A

Patient Information

Being overweight during pregnancy and after birth

About this information

This information is for you if you are overweight and are planning to become pregnant, expecting a baby or have recently given birth. It may also be helpful if you are a partner, relative or friend of someone who is in this situation.

Most women who are overweight have a straightforward pregnancy and birth and have healthy babies. However, being overweight or obese does increase the risk of complications to both you and your baby. You and your healthcare professionals can work together to reduce some of these risks.

Key points

- BMI (body mass index) calculation is a simple way to find out whether you are a healthy weight for your height. A BMI of 18.5–24.9 is considered healthy
- A BMI of 25 or above is associated with risks for you and your baby
- The higher your BMI, the greater the risks are
- Some of the risks with raised BMI include increased risk of thrombosis, gestational diabetes, high blood pressure, pre-eclampsia, induction of labour, caesarean birth, anaesthetic complications and wound infections
- A raised BMI also increases your risk of having a miscarriage, giving birth early, having a big baby or having a stillbirth
- Healthy eating and exercise can benefit you and your baby
- If your BMI is 30 or above, you are advised to take a higher dose of folic acid (5mg per day).

What is BMI?

BMI is your body mass index, which is a measure of your weight in relation to your height. A healthy BMI is in the range 18.5 to 24.9. A person with a BMI in the range

25 to 29.9 is considered overweight. A person with a BMI of 30 or above is considered to be obese.

When will BMI be calculated in pregnancy?

Your BMI will be calculated at your first antenatal booking appointment. You may be weighed again later in your pregnancy.

What are the risks of a high BMI in pregnancy?

Most women with a high BMI have a straightforward pregnancy and have healthy babies. However, being overweight or obese does increase the risk of complications for you and your baby. The higher your BMI, the greater the risks.

If your BMI at your antenatal booking visit is 30 or above, depending on other factors, you may be offered consultant-led antenatal care. Your healthcare professional will discuss with you any additional risks for you and your baby as well as how these can be reduced.

Risks to you and how to reduce some of these risks

Thrombosis

Thrombosis is a blood clot in your legs (venous thrombosis) or in your lungs (pulmonary embolism), which can be life-threatening. Pregnancy itself increases your risk of developing thrombosis. If you are overweight, the risk of developing thrombosis is further increased.

Your risk for thrombosis will be assessed at your first antenatal appointment and will be monitored during your pregnancy. You may be offered injections of a medication called low-molecular-weight heparin to reduce your risk of thrombosis. This is safe to take during pregnancy.

Gestational diabetes

Diabetes that is first diagnosed in pregnancy is known as gestational diabetes. If your BMI is 30 or above, you are three times more likely to develop gestational diabetes compared with women with a BMI under 25.

You will be offered a test for gestational diabetes between 24 and 28 weeks. If the test shows that you have gestational diabetes, you will be referred to a specialist for further testing and treatment as required.

High blood pressure and pre-eclampsia

Being overweight increases your risk of developing high blood pressure and pre-eclampsia. If you have a BMI of 30 or above, your risk of pre-eclampsia is 2–4 times higher compared with those with a BMI under 25. 3

Your blood pressure and urine will be monitored at each of your appointments. Your risk of pre-eclampsia may be further increased if:

- you are over 40 years old
- you have had pre-eclampsia in a previous pregnancy
- your blood pressure was already high before pregnancy

If you have these or other risk factors, your healthcare professional may recommend a low dose of aspirin to reduce the risk of you developing pre-eclampsia.

Mental health problems

All pregnant women are asked some questions about their mental health at their first antenatal (booking) appointment. Being overweight slightly increases your risk of developing mental health problems in pregnancy and after birth. Your healthcare professional will ask you a few questions to help identify whether you are at risk.

Further information on mental health problems during pregnancy and after birth is available on the Best Beginnings website:



Risks for your baby

- The overall likelihood of a miscarriage in early pregnancy is 1 in 5 (20%), but if you have a BMI of 30 or above, your risk increases to 1 in 4 (25%)
- If you are overweight before pregnancy or in early pregnancy, this can affect the way your baby develops in the uterus (womb). Overall, around 1 in 1000 babies in the UK are born with neural tube defects (problems with the development of the baby's skull and spine), but if your BMI is 30 or above, this risk is nearly doubled (2 in 1000)
- If you are overweight, you are more likely to have a baby weighing more than 4 kg, which increases the risk of complications for you and your baby during birth. If your BMI is 30 or above, your risk is doubled from 7 in 100 to 14 in 100 compared with women with a BMI of between 20 and 30
- The overall likelihood of stillbirth in the UK is 1 in every 200 births. If you have a BMI of 30 or above, this risk increases to 1 in every 100 births
- If you have a high BMI during pregnancy, you may need additional ultrasound scans to check your baby's development, growth and position. Your baby's growth is normally monitored during pregnancy using a tape measure to record the size of the uterus. If your BMI is more than 35 then it may be difficult to be accurate with a tape measure so your healthcare professional may request additional ultrasound scans

- All women in the UK are offered an ultrasound scan at around 20 weeks to look for structural problems that your baby may have. This scan is less accurate at picking up problems if your BMI is raised.

How else can the risks to me and my baby be reduced?

Healthy eating

A healthy diet will benefit both you and your baby during pregnancy and after birth. You may be referred to a dietician for specialist advice about healthy eating. The website 'NHS live-well' can provide more information about a healthy diet.



Trying to lose weight by dieting during pregnancy is not recommended. However, by making healthy changes to your diet, you may not gain any weight during pregnancy and you may even lose a small amount. This is not harmful.

Exercise

You will be offered information and advice about being physically active during pregnancy. There is further information about physical activity for pregnant women on the RCOG website at: www.rcog.org.uk/en/patients/patient-leaflets/physical-activity-pregnancy/

Physical activity will benefit both you and your baby. If you have not previously exercised routinely, you should begin with about 15 minutes of continuous exercise, three times per week, increasing gradually to 30 minute sessions every day. Some examples of healthy exercise include swimming, walking and pregnancy yoga.

An increased dose of folic acid

Folic acid helps to reduce the risk of your baby having a neural tube defect. If your BMI is 30 or above, a daily dose of 5mg of folic acid is recommended. This is higher than the usual pregnancy dose and is only available on prescription. Ideally, you should start taking this a month before you conceive and continue to take it until you reach your 13th week of pregnancy. However, if you have not started taking it early, there is still a benefit from taking it when you find out that you are pregnant.

Labour and giving birth

There is an increased risk of complications during labour and birth, particularly if your BMI is 40 or more. These complications include:

- your baby being born before 37 weeks of pregnancy (preterm birth)
- a longer labour
- your baby's shoulder becoming 'stuck' during birth (shoulder dystocia);
- an emergency caesarean birth

- more complications during and after a caesarean birth, such as heavy bleeding, anaesthetic complications and wound infection

Planning for labour and birth

While you are pregnant you should have a discussion with your healthcare professional about where you will choose to give birth. Depending on your individual circumstances, you may be advised to give birth in a consultant-led unit with easy access to medical support.

What happens in early labour?

You may be offered a cannula (a fine plastic tube that is inserted into a vein to allow drugs and/or fluid to be given directly into your bloodstream) early in labour. If you are overweight, it may be more difficult for your healthcare professional to do this, which may lead to a delay if it is not done until it is needed in an emergency situation.

Pain relief

All types of pain relief are available to you. However, having an epidural can be more difficult if you are overweight. You may be offered a discussion with an anaesthetist to talk about your choices for pain relief during labour.

Delivering the placenta (afterbirth)

To reduce your risk of postpartum haemorrhage (heavy bleeding after childbirth), your healthcare professional will recommend having an injection to help with the delivery of the placenta (afterbirth).

What happens after giving birth?

After giving birth, some of your risks continue. By working together with your healthcare professionals, you can minimise the risks in a number of ways, as discussed below.

Monitoring blood pressure

If you developed high blood pressure or pre-eclampsia during pregnancy, you are at increased risk of high blood pressure for a few weeks after the birth of your baby and this will therefore be monitored.

Prevention of thrombosis

You are at increased risk of thrombosis for a few weeks after the birth of your baby. Your risk will be reassessed after your baby is born. To reduce the risk of a blood clot developing after your baby is born:

- try to be active as soon as you feel comfortable – avoid sitting still for long periods
- wear special compression stockings, if you have been advised you need them
- if you have a BMI of 40 or above, you may be offered blood-thinning injections (low-molecular weight heparin treatment) for at least 10 days after the birth of your baby; it may be necessary to continue taking this for 6 weeks.

Information and support about breastfeeding

How you choose to feed your baby is a very personal decision. There are many benefits of breastfeeding for you and your baby. It is possible to breastfeed whatever your weight. Extra help is available if you need it from your healthcare professional and local breastfeeding support organisations (for example, see www.nct.org.uk/baby-toddler/feeding/early-days/new-baby-feeding-support).

Healthy eating and exercise

Continue to follow the advice on healthy eating and exercise. If you want to lose weight once you have had your baby, you can discuss this with your healthcare professional.

Planning for a future pregnancy

If you have a BMI of 30 or above, whether you are planning your first pregnancy or are between pregnancies, it is advisable to lose weight. By losing weight you:

- increase your ability to become pregnant and have a healthy pregnancy
- reduce the additional risks to you and your baby during pregnancy
- reduce your risk of developing diabetes in further pregnancies and in later life
- reduce the risk of your baby being overweight or developing diabetes in later life.

If you have fertility problems, it is also advisable to lose weight. Having a BMI of 30 or above may mean that you would not be eligible for fertility treatments such as IVF under the National Health Service.

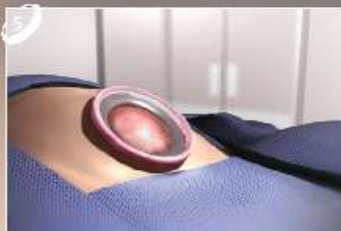
Your healthcare professional can offer you advice and support to lose weight. Crash dieting is not good for your health. Remember that even a small weight loss can give you significant benefits.

You may be offered a referral to a dietician or an appropriately trained healthcare professional. If you are not yet ready to lose weight, you should be given contact details for support for when you are ready.

Alexis® O

C-SECTION RETRACTOR*

Setup Guide



Prepare the surgical site according to standard procedure, making sure the skin is clean and dry.

1. Make an abdominal incision along the marked incision line.
2. Insert the Alexis O C-Section retractor's orange ring through the incision so that the lower portion is slightly superior to the pubic bone, between the abdominal wall and bladder.
3. Carefully check to ensure that no bowel or tissue entrapment has occurred before retraction is initiated.
4. Gently grasp the pink retraction ring at 10 and 2 o'clock and pull up until the orange ring sits tightly against the peritoneal layer. Roll inward until desired retraction is achieved.
5. Double check to ensure that no bowel or tissue entrapment has occurred. (See figure 3)
6. Perform Cesarean section through 360° retracted and protected incision site.
7. Perform required internal stitching as needed through the retracted incision site.
8. Retrieve the Alexis O C-Section retractor by simply removing the orange ring from the peritoneal cavity.

Refer to complete instructions for use.

* G6313 (Large) & G6314 (X-Large) are indicated for use in non-urgent C-Section delivery.



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Version / Amendment	Version	Date	Author	Reason
	1	Oct 2006	Anne Meadows: Risk Coordinator Consultation with: Maternity Development Committee. Back Care Team. Obesity Lead nurse. Obstetric theatres	New Guideline
	2	Dec 2009	Miss E Kieran Cons Obstetrician	Review
	3	April 2014	Miss E Kieran - Consultant Obstetrician Dr A Dhanaliwala (StR)	Review & update
	4	July 2019	Guidelines group	RCOG update. UHDB merge
UHDB	1	Jan 2023	Miss A Tirlapur - O&G Consultant (RDH) Mr R Deveraj - O&G Consultant (QHB)	Triannual review, no changes
	1.1	May 2023	Miss A Tirlapur - O&G Consultant (RDH)	Clarification that BMI 35-40 when re-weighed alone is not a reason in itself to transfer to CLC if booking BMI was <35
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