Frimley Health
NHS Foundation Trust

Care of Women with Obesity in Pregnancy

Key Points

- Compared with women of a healthy pre-pregnancy BMI, pregnant women with obesity and their infants have increased risks.
- Folic acid and vitamin D: Women with obesity in pregnancy should be advised to take 5 mg folic acid and vitamin D 800-1000 IU supplementation daily antenatally
- Pregnant women with a booking BMI 40 or greater should be referred to an obstetric anaesthetist for consideration of antenatal assessment.
- All women require an antenatal and postnatal VTE assessment taking into account their BMI and other additional risks

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Abbreviations

BMI	Body mass index
BP	Blood pressure
CG	Clinical guideline
IOL	Induction of labour
PPH	Postpartum haemorrhage
RCOG	Royal College of Obstetricians and Gynaecologists
RDS	Respiratory distress syndrome
USS	Ultrasound scan
VBAC	Vaginal birth after caesarean
VTE	Venous thromboembolism

Contents

1. Introduction

This guideline is based on the RCOG 'Care of Women with Obesity in Pregnancy' Green-top Guideline No 72 (Nov 2018)[1] and the NICE clinical guideline (CG 189)[26].

Obesity is becoming increasingly prevalent in the UK population and has become one of the most commonly occurring risk factors in obstetric practice, with 22.7% of the antenatal population being obese and fewer than one-half of pregnant women (46.3%) having a body mass index (BMI) within the normal range[3].

Obesity in pregnancy is associated with increased risk for both the mother and baby and therefore requires a multi-disciplinary team approach.

Compared with women of a healthy pre-pregnancy BMI, pregnant women with obesity are at increased risk of:
Miscarriage[4], gestational diabetes[5], pre-eclampsia[6], venous thromboembolism (VTE)[7], induced labour[8], dysfunctional or prolonged labour[9], caesarean section[10], anaesthetic complications[13], postpartum haemorrhage (PPH)[14], wound infections[12] and mortality[12].

Women over their ideal weight are less likely to initiate and maintain breastfeeding than women of normal weight[13].

Infants of obese mothers are at increased risk of:
congenital anomalies, stillbirth, prematurity, macrosomia, and neonatal death[5,14,15]. Intrauterine exposure to maternal obesity is also associated with an increased risk of developing obesity and metabolic disorders in childhood.

Women should be supported to lose weight before conception and between pregnancies in line with NICE CG189.

Table 1. Classification of adults according to BMI

Classification	BMI (kg/m^2)
Underweight	< 18.50
Normal range	18.50–24.99
Overweight	≥ 25.00
Preobese	25.00–29.99
Obese class I	30.00–34.99
Obese class II	35.00–39.99
Obese class III	≥ 40.00

2. Pre-pregnancy care

2.1 Primary care services should ensure that all women of childbearing age have the opportunity to optimise their weight before pregnancy. Advice on weight and lifestyle should be given during preconception counselling or contraceptive consultations. Weight and BMI should be measured to encourage women to optimise their weight before pregnancy.

2.2 Women of childbearing age with a BMI 30 or greater should receive information and advice about the risks of obesity during pregnancy and childbirth and be supported to lose weight before conception and between pregnancies in line with NICE clinical guideline (CG) 189.

2.3 Women should be informed that weight loss between pregnancies reduces the risk of stillbirth, hypertensive complications and fetal macrosomia. Weight loss increases the chances of successful vaginal birth after caesarean (VBAC).

2.4 Women with a BMI 30 or greater wishing to become pregnant should be advised to take 5mg folic acid supplementation daily, starting at least 1 month before conception and continuing during the first trimester of pregnancy[14].

2.5 Obese women are at high risk of vitamin D deficiency. However, although vitamin D supplementation may ensure that women are vitamin D replete, the evidence on whether routine vitamin D should be given to improve maternal and offspring outcomes remains uncertain[15].

2.6 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.

3. Provision of antenatal care

3.1 BMI calculation: All pregnant women should have their weight and height measured using appropriate equipment, and their BMI calculated at the antenatal booking visit. Measurements should be recorded in the electronic patient record system. Consideration should be given to reweighing women during the third trimester to allow appropriate plans to be made for equipment and personnel required during labour and birth.

3.2 Explain risks: Refer all women with a BMI over 35 for consultant-led care. Discuss and document risks of obesity in pregnancy and provide patient information leaflet.

3.3 **Weight gain/exercise**: There is lack of consensus on optimal gestation weight gain. Until further evidence is available, a focus on healthy diet may be more applicable than prescribed weight gain targets. General dietary advice in the antenatal clinic should be offered to all women with raised BMI and consider dietician referral to those with BMI over 40.

3.4 **Folic acid:** Women should be advised to take **5mg folic acid** supplementation daily.

3.5 **Aspirin:** Women with more than one moderate risk factor (BMI of 35 or greater, first pregnancy, maternal age of more than 40 years, family history of pre-eclampsia, inter-pregnancy interval over 10 years and multiple pregnancy) may benefit from taking **150mg aspirin daily at night from 12 weeks of gestation until birth of the baby.**

3.6 **Antenatal screening**: All women should be offered antenatal screening for chromosomal anomalies. Women should be counselled, however, that some forms of screening for chromosomal anomalies are slightly less effective with a raised BMI. Screening and diagnostic tests for structural anomalies, despite their limitations in the obese population, should be offered. However, women should be counselled that all forms of screening for structural anomalies are more limited in obese pregnant women.

3.7 **Gestational Diabetes screening**: All pregnant women with a booking BMI 30 or greater should be screened for gestational diabetes at 24-27+6 weeks or earlier in women who had previous gestational diabetes.

3.8 **Hypertension screening**: An **appropriate size of cuff** should be used for blood pressure measurements taken at the booking visit and all subsequent antenatal consultations. The cuff size used should be documented in the medical records. Ideally, BP should be monitored at 3 weekly intervals between 24 and 32 weeks, and 2 weekly intervals from 32 weeks until birth.

3.9 **VTE assessment**: Risk assessment should be individually discussed, assessed and documented at the **first antenatal visit, during pregnancy (if admitted or develop intercurrent problems), intrapartum and postpartum**. Please complete checklist during antenatal appointment and bear in mind that BMI over 40 is counted as 2 moderate risk factors. Antenatal and post-birth thromboprophylaxis should be considered in accordance with the cross-site guideline “Thromboprophylaxis and the treatment of Venous Thromboembolism in Pregnancy and the Puerperium” and the RCOG Green Top Guideline No. 37a. Inform women of hydration and mobility to reduce VTE risk antenatally. Inform women of possible symptoms of VTE. Refer to “Thromboprophylaxis and the treatment of Venous Thromboembolism in Pregnancy and the Puerperium” guideline.

3.10 **Mental health**: Women with BMI 30 or greater are at increased risk of mental health problems (**especially anxiety and depression**) and should therefore be screened for these in pregnancy. Appropriate support should be offered if

required. There is insufficient evidence to recommend a specific lifestyle intervention to prevent depression and anxiety in obese pregnant women.

3.11 **Fetal growth monitoring**: All women must have a customised growth chart generated. Fundal height measurements should be performed and plotted on the customised growth chart every 2-3 weeks from 26-28 weeks of gestation until birth. For women having **BMI >35,** serial growth scans should be offered at 32-, 36- and 38-39-weeks' gestation. **Women undergoing serial growth scans do not need fundal height measurements to be carried out.**

3.12 **Anaesthetic referral**: Please refer to the obstetric anaesthetic guideline regarding site-specific criteria for anaesthetic referral for antenatal assessment. Difficulties with venous access and regional and general anaesthesia should be assessed. In addition, an anaesthetic management plan for labour and birth should be discussed and documented. Multidisciplinary discussion and planning should occur where significant potential difficulties are identified.

3.13 **Planning labour and birth**: NICE NG201 Recommends that healthcare providers should discuss labour and birth with pregnant women before 36 weeks of gestation. This discussion should include the labour plan, pain management, management of prolonged pregnancy and active management of third stage of labour. Antenatal colostrum collection should be discussed and facilitated from 36 weeks onwards to support initiation and continuation of breastfeeding. When discussing labour with the woman, it is important to consider maternal comorbidities, fetal complications and access to services for emergency birth and neonatal resuscitation if required. This requires a multidisciplinary, individualised approach, with consideration of the woman's and her partner's views, and may involve the obstetrician, midwife and anaesthetist, and early anticipation of potential maternal and fetal complications that may arise during the intrapartum period.

3.13.1 **Place of birth**: In alignment with Birth Centre criteria, booking BMI >/=18 or </=35 should be green for birth centre, BMI 36-39 in multipara should be amber and BMI >35 in primipara and >/= 40 in multipara should be red (delivery in labour ward recommended). There should be early recourse to labour ward if complications arise in birth centre. However, if there are risk factors other than BMI, decision should be made appropriately and in collaboration with women.

3.13.2 **IOL:** Elective induction of labour at term in obese women may reduce the chance of caesarean birth (and macrosomia) without increasing the risk of adverse outcomes (no difference in the odds of operative vaginal delivery, birth lacerations, brachial palsy or RDS)[18]; **the option of induction should be discussed with each woman on an individual basis.** Offer birth choice clinic appointment with consultant midwife if the woman needs further support.

3.13.3 **Fetal macrosomia**: Where macrosomia is suspected, induction of labour at term may be considered. Parents should have a discussion about the options of induction of labour and expectant management. A 2016 Cochrane database systematic review of randomised trials

for IOL for suspected fetal macrosomia (irrespective of BMI) concluded that elective induction of labour did not reduce the risk of brachial plexus injury. However, IOL results in lower mean birthweight, and fewer fractures and cases of shoulder dystocia. The authors concluded that while further trials are needed to identify the optimal gestation for induction and diagnosis of macrosomia, induction of labour may be considered where macrosomia can be identified confidently and **options of induction and expectant management should be discussed**[19]**.** If suitable, offer 'Big Baby Trial' enrolment.

3.13.4 VBAC: Women with a booking BMI 30 or greater should have an **individualised decision for VBAC following informed discussion and consideration of all relevant clinical factors**. Obesity is a risk factor for unsuccessful VBAC[20]. Class III (BMI >/= 40) obesity is associated with increased rates of uterine rupture during trial of labour and neonatal injury. Emergency caesarean section in women with obesity is associated with an increased risk of serious maternal morbidity. This should also be taken into account when discussing the risks and benefits of VBAC. Offer birth choice clinic appointment with consultant midwife if the woman needs further support.

3.14 Bariatric surgery: Women with previous bariatric surgery have high-risk pregnancies and should have consultant-led antenatal care. Women with previous bariatric surgery should be referred to a dietician regarding their dietary needs. They should have nutritional surveillance and screening for deficiencies during pregnancy.

4. Provision of intrapartum care

4.1 Those with booking BMI >/=18 or </=35 should be green for birth centre, BMI 36-39 in multipara should be amber and BMI >35 in primipara and >/= 40 in multipara should be red (delivery in labour ward recommended).

4.2 Women with BMI over 40 who are in established labour should receive continuous midwifery care, with consideration of additional measures to prevent pressure sores and monitor the fetal condition.

4.3 Inform theatre staff and anaesthetist of any women with BMI over 40

4.4 Offer tablet of **Omeprazole 40mg 12 hourly** to all women with a BMI over 30

4.5 Establish early IV access. In women with a BMI 40, consideration should be given to the siting of a second cannula.

4.6 USS should be performed to confirm presentation (either at start of IOL or during admission in labour)

4.7 Fetal monitoring: Aligning place of delivery criteria to fetal monitoring i.e. intermittent auscultation for birth centre women and continuous fetal monitoring for labour ward women would streamline fetal monitoring process. Fetal heart rate monitoring can be a challenge and close surveillance is

required with early recourse to fetal scalp electrode or ultrasound assessment of the fetal heart if necessary.

4.8 Although **active management of the third stage of labour** is advised for all women, the increased risk of PPH in those with a BMI greater than 30 makes this even more important[22]

4.9 Caesarean section:

4.9.1 Consider additional assistant if difficulty is anticipated.

4.9.2 Women with BMI 30 or more having a caesarean section are at increased risk of wound infection and should receive **prophylactic antibiotics** at the time of surgery[23].

4.9.3 Consider using **abdominal retractors** (e.g. Alexis) to ease access

4.9.4 The **obstetric consultant should be present for all women with a BMI >50** and consider being present for those with a BMI >40[24].

4.9.5 Women undergoing caesarean section who have **more than 2cm subcutaneous fat** should have suturing of the subcutaneous tissue space in order to reduce the risk of wound infection and wound separation[25].

4.9.6 **Consider 'PICO' wound dressing for women with a BMI 40 or greater or in diabetics when the BMI is 35 or greater or anyone with a fat apron covering the wound**. This dressing should remain in-situ for 7 days.

5. Provision of postnatal care and follow-up after pregnancy

5.1 **VTE prevention:** All women require a postnatal **VTE assessment** taking into account their BMI and other additional risks.

5.2 **VTE prevention with morbid obesity**: All women with BMI above 40 should be advised to have postnatal thromboprophylaxis in doses appropriate for their weight for at least 10 days (regardless of their mode of delivery) after delivery. Refer to the "Thromboprophylaxis and treatment of Venous Thromboembolism in Pregnancy and Puerperium" guideline.

5.3 **Breastfeeding:** Obesity is associated with low breastfeeding initiation and maintenance rates. Women with a booking BMI 30 or greater should receive appropriate specialist advice and support antenatally and postnatally regarding the benefits, initiation and maintenance of breastfeeding. However, measures such as early and unrestricted skin to skin will support the newborn to adapt to extra-uterine life and encourage initiation of breastfeeding soon after birth and regular, scheduled contact for breastfeeding support in the early postnatal period have a positive impact on breastfeeding outcomes[27].

5.4 **Contraception:** Postnatal contraception advice should be given according to the Faculty of Sexual and Reproductive Healthcare guidelines [26] which recognise that women with obesity are at increased risk of VTE if they take the combined oral contraceptive pill. Consider immediate post-partum contraception before discharge home.

5.5 **Dietary and lifestyle advice**: Refer to NICE CG189. Women with class I obesity (BMI 30-34.99) or greater at booking should continue to be offered nutritional advice following childbirth from an appropriately trained professional, with a view to weight reduction in line with NICE Public Health guideline 27. Modification of dietary and physical activity behaviours are associated with a significant reduction in body weight compared with no lifestyle intervention[28,29].

5.6 **Women who have been diagnosed with gestational diabetes** should have postnatal follow-up with a fasting blood sugar level in 6-13 weeks or HbA1C level in 13 weeks post-delivery and yearly thereafter[30].

6. Equipment

6.1 Consider if specialist equipment may be required for intrapartum or postnatal care, even if the woman is independent in all aspects of mobilising and caring for herself.

6.2 All maternity beds are suitable unless a woman weighs ≥ 250kg, in which case a bariatric bed can be requested via the portering service (at Frimley Park from the equipment store in Rowan House). This service is available 24 hours a day. At Frimley Park further bariatric equipment is also stored in Rowan House, such as chairs, commodes and wheelchairs.

6.3 A hoverjack is available if required, at Frimley Park this is kept on the postnatal ward; slide sheets are also available if required. Additional slings and slide sheets can also be obtained from Rowan House or from the manual handling team.

6.4 Theatres also have a ‘HoverMatt’ mattress which is an air transfer system. This is an aid for performing lateral transfers on patients with raised BMI’s and this is often used in theatre. It is a safe and comfortable way of transferring patients and also reduces skin shearing.

6.5 Note: it is more accurate to get a blood pressure (BP) reading from using a cuff that is too big for the woman than too small. BP cuffs that are too tight can give false readings. A selection of large BP cuffs are available.

WPH	Table	Weight Allowance
Obstetric Theatre	Eschmann T20	Supine 300kg (47.2 stone) Lithotomy 220kg (34.6 stone)
Room 12 LW	Eschmann MR	Supine 130kg (21 stone)
Labour ward bed	Hill Rom Bed	227kg - recommended maximum patient weight 213kg
Postnatal ward bed	Enterprise	247kg (39 stone) Depending on mattress
FPH	**Table**	**Weight Allowance**
Operative theatre (see appendix 3)		
Labour ward	Hill-Rom birthing bed	227kg - recommended maximum patient weight 213kg
Postnatal ward	Enterprise 5000	250kg - recommended maximum patient weight 185kg

7. Tissue Viability

Assessing tissue viability and providing pressure area care is important for every woman. Women with a raised BMI, (especially women with BMI's ≥ 40) often require extra vigilance and care as they are at a higher risk of pressure related trauma.

Check everyone's Waterlow score on admission, whenever their situation changes e.g., when an epidural is sited and again post-delivery/post-operatively.

Depending on their Waterlow score and risk, document skin inspection findings, appropriate repositioning regime, action taken and the care plan. This may be repositioning every 2 hours or 4 hours depending on her Waterlow score, pressure areas, any pressure damage and risk.

If pressure areas are starting to breakdown, and you identify redness, you need to increase repositioning regime and skin inspection, make sure appropriate pressure relieving equipment is in place - keep the woman informed and encourage them to keep moving.

If the woman has anti-embolism stockings (AES) make sure these are removed to check the heels and then re-applied, as this area can get missed if stockings are not removed and re-applied daily. Heels are very high risk if patient has had an epidural and they are not moving their legs. Off-loading of pressure is vital and appropriate pressure relieving equipment should be used. Additionally, if the woman is diabetic, she should have a foot check and also her heels are more vulnerable to being at risk of pressure damage. (Heel protection is available Devon sheets, heal up boots, Halton boots and a pillow

if these are not available. The bottom of the bed can also be dropped down to help off load pressure)

Category 1 and Category 2 pressure ulcers do not need to be referred to Tissue Viability (but can be contacted for advice) as these should be managed at ward level but the ward Manager should be made aware and should review the pressure damage. Medical illustration should be contacted to take photos of pressure damage and an RL completed. However, category 3 & 4, unstageable and deep tissue injury need to be referred to Tissue Viability via the intranet and also patient safety team made aware.

Refer to the Pressure Ulcer Categorisation Tool and Categorisation system to support grading categorisation of pressure damage. See Appendices 1 and 2.

8. Auditable standards

8.1 Proportion of women with class I obesity or greater at booking who commenced 5mg folic acid supplementation daily prior to conception (100%).

8.2 Proportion of pregnant women who have a record of maternal height, weight and BMI in their maternity records (100%).

8.3 Proportion of women with class III obesity who had an antenatal anaesthetic review (100%).

8.4 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 (100%).

8.5 Proportion of women with class III obesity at booking who had pharmacological thromboprophylaxis prescribed postnatally (100%).

8.6 Proportion of women with class I obesity or greater at booking who had a glucose tolerance test during pregnancy (100%).

8.7 Proportion of women with class I obesity or greater at booking who had active management of the third stage of labour (100%).

8.8 Proportion of operative vaginal births and caesarean sections in women with class III obesity at booking, which were attended by an obstetrician and anaesthetist at specialty trainee level 6 or above (100%).

9. Monitoring compliance

This guideline will be subject to three yearly audit. The audit midwife is responsible for coordinating the audit. Results presented to the department clinical audit meeting. Action plans will be monitored at the department clinical audit meeting.

10. Communication

If there are communication issues (e.g., English as a second language, learning difficulties, blindness/partial sightedness, deafness) staff will take appropriate measures to ensure the patient (and her partner, if appropriate) understand the actions and rationale behind them

11. Equality and diversity assessment

This guideline has been subject to an Equality Impact assessment.

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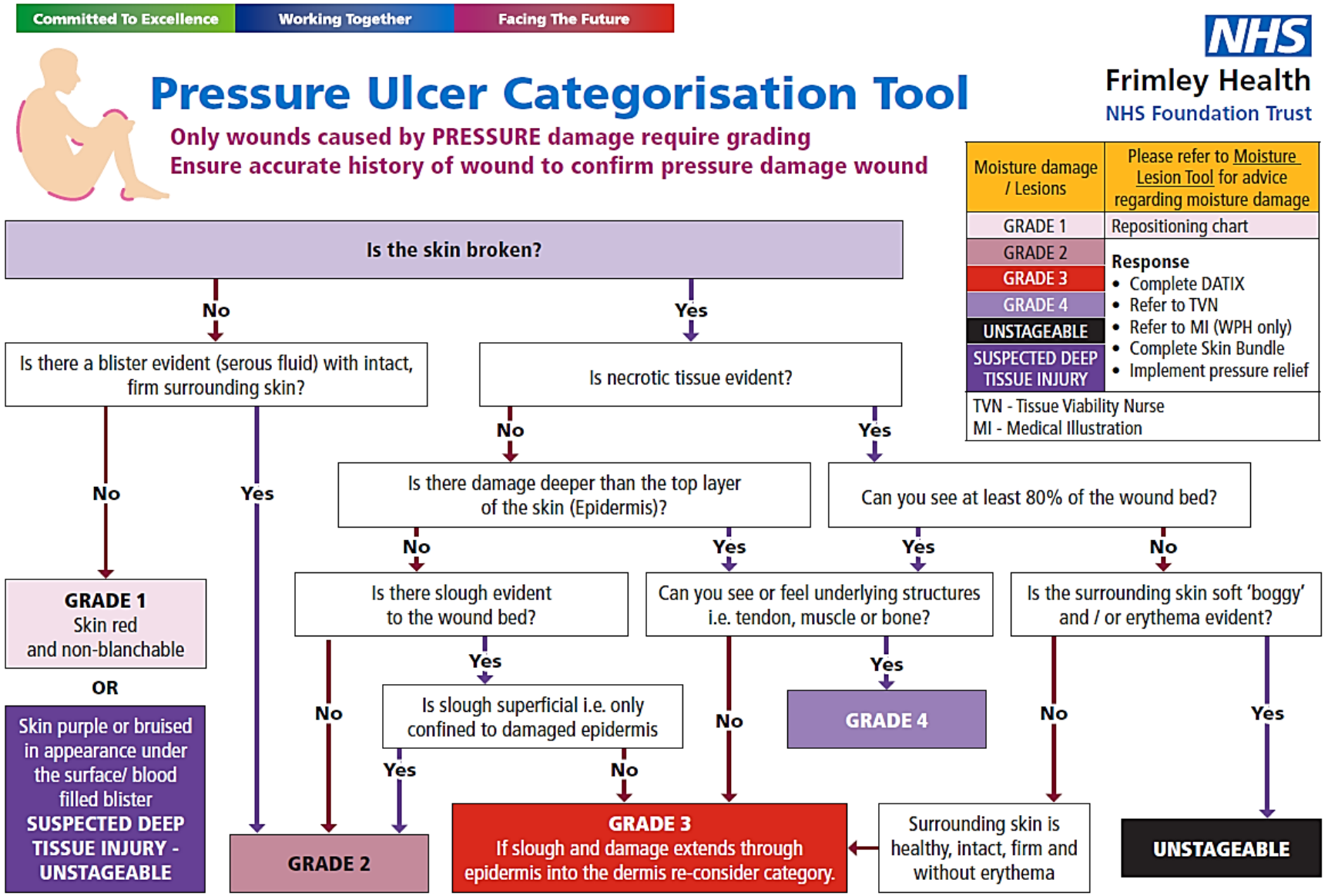
Appendix 1: Pressure Ulcer Categorisation Tool



Appendix 2: Pressure Ulcer Classification System

Pressure Ulcer Classification System

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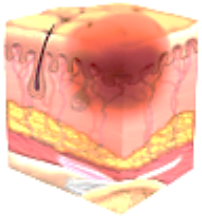
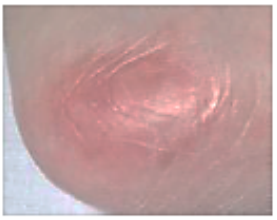
Category/Stage I: Non-blanchable Erythema

Intact skin with non-blanchable redness of a localized area. Usually over a bony prominence. Darkly pigmented skin may not have visible blanching; its colour may differ from the surrounding area.

The area may be painful, firm, soft, warmer or cooler as compared to adjacent tissue. Category/Stage I may be difficult to detect in individuals with dark skin tones. May indicate "at risk" individuals (a heralding sign of risk).



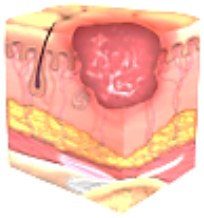


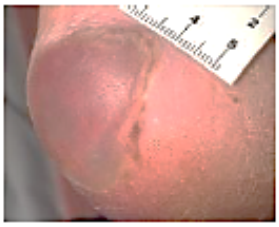
Category/Stage II: Partial Thickness Skin Loss

Partial thickness loss of dermis presenting as a shallow open ulcer with a red pink wound bed, without slough. May also present as an intact or open/ ruptured serum- filled blister.

Presents as a shiny or dry shallow ulcer without slough or bruising.* This Category/Stage should not be used to describe skin tears, tape burns, perineal dermatitis, maceration or excoriation.

*Bruising indicates suspected deep tissue injury.





Category/Stage III: Full Thickness Skin Loss

Full thickness tissue loss. Subcutaneous fat may be visible but bone, tendon or muscle are not exposed. Slough may be present but does not obscure the depth of tissue loss. May include undermining and tunnelling.

The depth of a Category/Stage III pressure ulcer varies by anatomical location. The bridge of the nose, ear, occiput and malleolus do not have subcutaneous tissue and Category/Stage III ulcers can be shallow. In contrast, areas of significant adipose tissue can develop extremely deep Category/Stage III pressure ulcers. Bone/tendon is not visible or directly palpable.

Category/Stage IV: Full Thickness Tissue Loss

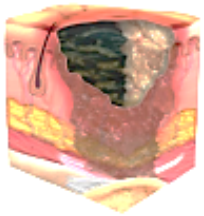
Full thickness tissue loss with exposed bone, tendon or muscle. Slough or eschar may be present on some parts of the wound bed. Often include undermining and tunnelling.

The depth of a Category/Stage IV pressure ulcer varies by anatomical location. The bridge of the nose, ear, occiput and malleolus do not have subcutaneous tissue and these ulcers can be shallow. Category/Stage IV ulcers can extend into muscle and/or supporting structures (e.g., fascia, tendon or joint capsule) making osteomyelitis possible. Exposed bone/tendon is visible or directly palpable.

Unstageable: Depth Unknown

Full thickness tissue loss; in which the base of the ulcer is covered by slough (yellow, tan, grey, green or brown) and/or eschar (tan, brown or black) in the wound bed.

Until enough slough and/or eschar is removed to expose the base of the wound, the true depth, and therefore Category/Stage, cannot be determined. Stable (dry, adherent, intact without erythema or fluctuance) eschar on the heels serves as "the body's natural (biological) cover" and should not be removed.



Suspected Deep Tissue Injury: Depth Unknown

Purple or maroon localized area of discoloured, intact skin or blood-filled blister; due to damage of underlying soft tissue from pressure and/or shear. The area may be preceded by tissue that is painful, firm, mushy, boggy, warmer or cooler as compared to adjacent tissue.

Deep tissue injury may be difficult to detect in individuals with dark skin tones. Evolution may include a thin blister over a dark wound bed. The wound may further evolve and become covered by thin eschar. Evolution may be rapid exposing additional layers of tissue even with optimal treatment.

INTERNATIONAL NPUAP/EPUAP PRESSURE ULCER CLASSIFICATION SYSTEM

National Pressure Ulcer Advisory Panel, European Pressure Ulcer Advisory Panel and Pan Pacific Pressure Injury Alliance. Prevention and Treatment of Pressure Ulcers: Quick Reference Guide. Emily Haesler (Ed.). Cambridge Media: Osborne Park, Australia; 2014

Appendix 3: Frimley Park Hospital main theatres operating tables safe working weight limits

Make	Type	Supine	Lithotomy
Steris	3805 S	453kg/994lbs/71st	453kg/994lbs/71st
Berchtold	Operon B710	330kg/770lbs/52st	330kg/770lbs/52st
Eschmann	T20	300kg/658lbs/47st	300kg/658lbs/47st
Berchtold	Operon B810	272kg/600lbs/42st 12lbs	272kg/600lbs/42st 12lbs
Eschmann	RX600 series	250kg/546lbs/39st	250kg/546lbs/39st
Stryker	Eye trolley	226kg/504lb/36st	NA
QA2	DSU trolley	160kg/352lbs/25st 3lbs	160kg/352lbs/25st 3lbs
QA4	DSU trolley	160kg/352lbs/25st 3lbs	160kg/352lbs/25st 3lbs
Eschmann	MR series	135kg/294lbs/21st	135kg/294lbs/25st
OSI	Spinal table	Hollow frame	158kg/350lbs/25st
OSI	Spinal table	Solid frame	226kg/500lbs/35st 10lbs
OSI	Spinal table	Wilson frame	136kg/300lb/21st 6lbs

These supine weights are with the patient's umbilicus over the central column. The patient's position on the table can also affect the safe weight limits for the tables. All these limits have been obtained from the manufacturers.

Appendix 4: Prompt on EPIC to outline risks and frequency of complications

Risks of High BMI		
Antenatal	**Intrapartum**	**Postnatal**
Miscarriage	Induction of Labour	Haemorrhage
Difficult Ultrasound Scan	Operative Delivery	Wound infection
Thromboembolism	Anaesthetic Complications	High Blood Pressure
Gestational Diabetes	Stillbirth	
Heart Disease	Neonatal Death	
Congenital Abnormalities	Shoulder Dystocia & Implications	
Macrosomia		
Prematurity		
Management: -Folate 5mg, vit D 800iu -LMWH if VTE score >3 -OGTT -Serial growth scans	 -Delivery plan at 36/40 -IV access -Early epidural -Consider FSE	 -Active 3rd stage -Reassess VTE risk -Mobilise -Weight loss advice
All above discussed with patient – Signature _____ / /		

Risks:

- **Miscarriage** risk in BMI >30 = 25% (1 in 4)
- **Thromboembolism** risk:
  BMI >30 = 10.4/10,000 deliveries, BMI >35 = 14.5/10,000, BMI >40 = 24.8/10,000
- **Heart disease** up to 3 times more likely in BMI >30
- **Pre-eclampsia** risk in BMI >30 = 2-4 times higher compared with BMI <25
- **Congenital anomalies** in BMI >30:
  Neural tube defect risk doubles to 2/1000
  Spina bifida risk more than doubles (OR 2.24)
  Cardiovascular anomalies is 1.3 times more likely
  Cleft lip and palate risk 1.2 times more likely
- **Gestational diabetes** is 2.5 times more likely in BMI >30
- **Macrosomia** risk doubles in BMI >30 to 14% (from 7% in women with BMI 20-30)
- **Extreme preterm delivery** risk:
  BMI >30 = 1.2 times more likely, BMI >40 = 1.8 times more likely
  BMI >50 = 3.5 times more likely
- **Induction of labour** 1.7 times more likely in BMI >30, takes longer requiring more PGE2
- **Anaesthetic complications**:
  Higher rate of neuraxial analgesia failure with 40% longer procedure times
- **Shoulder dystocia** in BMI >30: nearly 3 times more likely
- **Emergency caesarean** risk in BMI >30: 1.5 - 2 times more likely
- **PPH** nearly 1.5 times more likely in BMI >30
- **Wound infection** 2.2 times higher in BMI >30
- **Stillbirth and neonatal death** risk doubles in BMI >30

Appendix 5: Risk of obesity; information for pregnant women

NHS
Frimley Health
NHS Foundation Trust

Obstetrics and Gynaecology
Frimley Health

Risks of obesity

Information for pregnant women

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What is body mass index (BMI)?
BMI is a calculation that health professionals use to work out whether you are a healthy weight for your height (weight (kg)/height (m^2))

BMI 18.5-24.9	Healthy weight
BMI 25-29.9	Overweight
BMI 30-34.9	Obese
BMI 35 or over	Morbidly obese

Your BMI is calculated at your booking visit to make sure you get the right type of care during your pregnancy.

Pre-pregnancy care
If you are not yet pregnant, and have a BMI of more than 24.9, weight loss will reduce the risks during pregnancy and increase the success rate of infertility treatment if this is required.

You should aim to maintain your BMI in the range 20-25.

If your BMI is over 30 you should take 5mg folic acid which must be prescribed by your GP starting at least one month before conception and continue this during the first trimester of pregnancy. It is also recommended that you take 1000IU Vitamin D supplements daily during pregnancy and while breastfeeding.

Antenatal Care

If your BMI is over 30

- Your community midwife will give you advice on eating a healthy balanced diet and keeping active to manage your weight and avoid any unnecessary weight gain. You should not try and lose weight unless advised to do so.

- A routine ultrasound scan will be offered at around 11-13 weeks and 20-22 weeks. There is a reduced accuracy of ultrasound in detecting

congenital abnormalities and measuring the baby's growth compared to women with a normal BMI.

- A glucose tolerance test (a blood test) will be offered at 28 weeks to screen for gestational diabetes. Your midwife will advise you about this.
- Your midwife or doctor will also assess the risk of thromboembolism (clots) in pregnancy, taking into account your BMI and any other risk factors that you may have.

If your BMI is over 35

- You will be advised to have a hospital birth and consultant-led care.
- You will be seen by a weight management specialist midwife and be offered serial ultrasound scans to check the baby's growth and presentation. After the scan you will see a consultant.

If your BMI is over 40

- An appointment to see a dietician may be offered to you if required.
- It may be recommended that you see an anaesthetist for an individual assessment of anaesthetic risk in case an epidural is required, or if you ask for an epidural.
- An individual risk assessment will be made, if necessary, to ensure that all the appropriate equipment is available in readiness for your admission to hospital.

Healthy Weight Gain

Pregnancy is not the time to diet and lose weight. The amount of weight a woman may gain in pregnancy can vary a great deal.

There is no evidence to support "eating for two". In fact, it is recommended that you only increase your calorie intake by 200 calories a day in the last trimester of pregnancy. This is the same as having a yoghurt with a sprinkle of almonds or a small bowl of muesli with milk and an apple.

The Institute of Medicine recommend the following weight gain in pregnancy:

BMI range	Recommended weight gain
18.5-24.9	25-35 lbs (11.5-16 kgs)
25-29.9	15-25 lbs (7-11.5 kgs)
Over 30	11-20 lbs (5-9.1 kgs)

Health risks for obese women and their babies.
Women who are obese when they become pregnant face an increased risk of complications during pregnancy and childbirth. The greater your BMI, the higher the chance of complications. The list of risks is not exhaustive.

Antenatal Complications:

- Difficulty with ultrasound scanning
- Difficulty in assessing baby's growth, congenital abnormalities, position, and monitoring baby's heartbeat.

Pregnancy Complications:

- Gestational diabetes
- High blood pressure
- Large or small babies
- Increased risk of stillbirth, or babies dying shortly after birth.
- Increased risk of thromboembolism (formation of blood clots)

Labour Complications:

- Increased need for pain relief
- Difficulty in having an epidural/spinal
- Greater chance of being induced (the need to start your labour)
- Failed induction of labour (unable to start your labour)
- Increase in Caesarean section rate and longer operating time
- Anaesthetic problems
- Shoulder dystocia (baby's shoulders getting stuck)
- Increased risk of anal sphincter injury (serious tear)
- Higher rate of instrumental delivery (forceps or ventouse)
- Higher rate of trauma to baby – e.g. nerve damage

Postnatal Complications:

- Infection (Caesarean wound, urinary, vaginal or uterine)

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- Risk of deep vein thrombosis (DVT) and pulmonary embolism (PE)
- Heavy bleeding after birth
- Difficulty in establishing breastfeeding
- Longer stay in hospital

Care in labour

If your BMI is over 35

- Pethidine may give less effective pain relief than for women whose BMI is within the normal range.
- If you choose to have an epidural, it may be more difficult for the anaesthetist to site the epidural, or to ensure that it is fully effective.
- It may be more difficult to monitor your baby's heart rate, in which case you may be advised that a fetal scalp clip should be attached to the baby's head to record the heart rate.
- Your midwife will encourage you to move around as much as possible as you will be at an increased risk of pressure area damage to your skin if you are immobile during labour. If you are not walking around, the midwife will advise you to change your position frequently to avoid the risk of pressure damage.
- You will be at increased risk of developing clots in the veins in your legs if you are immobile. If a caesarean section is needed, you will be given anti-embolic stockings to wear to reduce the risk of clot formation and have a course of injections to thin your blood.

If your BMI is over 40

- The birthing pool will be unavailable for you to use.

After the birth of your baby

You should aim to lose weight before your next pregnancy. This will help to reduce your risks during the next pregnancy. It will also help to avoid the long-term health risks associated with being overweight.

Your midwife, health visitor or GP will be able to give you advice on healthy eating and exercise to help you lose weight. They can also provide information on contraceptive options.

Exclusively breastfeeding for 12 months or more may help with your postnatal weight loss. Mothers who are very obese: Individual assessment

will be required, preferably with the mother, based on her mobility, spatial awareness and the space available in the bed.

Where can I find out more?

www.healthystart.nhs.uk

www.nhs.uk/Change4Life/Pages/why-change-for-life.aspx

www.bdaweightwise.com

www.nhs.uk/live-well

www.fhft.nhs.uk

www.frimleyhealthandcare.org.uk/maternity

Contact information :

If you have any further queries, please contact:

Your named midwife
Or
The Antenatal Clinic on
0300 6134127 Frimley Park Hospital
0300 6154513 Wexham Park Hospital

Please use this space to note any questions you may have.

For a translation of this leaflet or for accessing this information in another format:

Please contact (PALS) the Patient Advice and Liaison Service on:

Frimley Park Hospital
Telephone: 0300 613 6530
Email: fhft.palsfrimleypark@nhs.net

Wexham Park & Heatherwood Hospitals
Telephone: 0300 615 3365
Email: fhft.palswexhampark@nhs.net

Frimley Park Hospital	Heatherwood Hospital	Wexham Park Hospital
Portsmouth Road, Frimley, Surrey, GU16 7UJ	London Road, Ascot, SL5 8AA	Wexham Street, Slough, Berkshire, SL2 4HL
Hospital switchboard: 0300 614 5000		**Website:** www.fhft.nhs.uk

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Dept.	Obstetrics and Gynaecology	
Ref. No	Issue Date November 2022	Review Date November 2025

Legal Notice
Please remember that this leaflet is intended as general information only. We aim to make the information as up to date and accurate as possible. Please therefore always check specific advice or any concerns you may have with your doctor.

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Full version control record

Version:	2.0
Guidelines Lead(s):	Dr Christina Coroyannakis, Consultant Obstetrician
Contributor(s):	Haren Thakrar (speciality doctor Obstetrics and Gynaecology), Anna Jerome (Patient safety lead midwife, FPH)
Lead Director / Chief of Service:	Miss Anne Deans
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Pharmaceutical dosing advice and formulary compliance checked by:	Ruth Botting, 09.05.2022
Key words:	Obesity, BMI

This guideline has been registered with the trust. However, clinical guidelines are guidelines only. The interpretation and application of clinical guidelines will remain the responsibility of the individual clinician. If in doubt, contact a senior colleague or expert. Caution is advised when using guidelines after the review date. This guideline is for use in Frimley Health Trust hospitals only. Any use outside this location will not be supported by the Trust and will be at the risk of the individual using it.

Version Control Sheet

Version	Date	Guideline Lead(s)	Status	Comment
1.0	September 2019	Dr Haren Thakrar	Final	First cross site version
2	November 2022	Dr Christina Coroyannakis, Consultant Obstetrician	Final	Scheduled update. Ratified at OCGC 1st Nov 2022

Related Documents

Document Type	Document Name
Guideline	Thromboprophylaxis and treatment of Venous Thromboembolism in Pregnancy and Puerperium
Patient Leaflet	Risk of Obesity Information for Pregnant Women