MATERNITY UNIT
GUIDELINE:

WOMEN WITH A BMI \(\geq 35\): MANAGEMENT OF PREGNANCY AND BIRTH

SCOPE:
All Midwives, LMC’s, Obstetricians and Anaesthetists working in Maternity Unit

AUTHOR:
Midwifery Educator & Quality Coordinator

PURPOSE:
To provide midwives, LMC’s and obstetricians with guidance on the appropriate care for obese pregnant women in order to improve the outcome of their pregnancy. This does not address pre-conception counselling.

DEFINITIONS:
Obesity is measured by calculating the body mass index (BMI) using the formula

<table>
<thead>
<tr>
<th>BMI = weight (Kg) / height (m²)</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.5 – 24.9</td>
<td>Normal weight</td>
</tr>
<tr>
<td>25 – 29.9</td>
<td>Over weight</td>
</tr>
<tr>
<td>30 – 34.9</td>
<td>Obese I</td>
</tr>
<tr>
<td>35 - 39.9</td>
<td>Obese II</td>
</tr>
<tr>
<td>40 or more</td>
<td>Obese III</td>
</tr>
</tbody>
</table>

♦ For pregnant women with a BMI \(\geq 35\) to 40 the LMC must recommend to the woman that a consultation with an obstetrician is warranted given that her pregnancy, labour, birth or puerperium is or may be affected due to her raised BMI and a plan of care will be agreed between the woman, her LMC and the specialist to improve the outcome of her pregnancy. If the woman has an increased risk of having a caesarean birth then the obstetrician will consider a referral for an anaesthetic consultation.

♦ Pregnant women with a BMI \(\geq 40\) are not suitable for routine midwifery care and fall under the transfer of care referral category; the LMC must therefore recommend to the woman that the responsibility for her care be transferred to a specialist given that her pregnancy, labour, birth or puerperium is or may be affected due to her raised BMI. The decision regarding ongoing clinical roles/responsibilities will involve a 3 way conversation between the specialist, LMC and the woman and should take place prior to 20 weeks gestation, so that a plan of care can be agreed and commenced and may include an anaesthetic referral.
BACKGROUND:
There is substantial evidence that obesity in pregnancy contributes to increased morbidity and mortality for both mother and baby. An increase in BMI of at least 3 units between pregnancies doubles the risk of pre-eclampsia, gestational diabetes, stillbirth and large-for-gestational-age (LGA) birth in subsequent pregnancies. In 2014, BMI data were available for 86% of mothers of perinatal related deaths. At least 49.5% of the mothers of stillborn babies and 48% of mothers of neonatal deaths were overweight or obese (PMMRC 2014). The CEMACH (2007) report indicated that more than half of the women who died from direct / indirect causes were obese.

RISKS INCREASED BY OBESITY IN PREGNANCY

Maternal
- Spontaneous and recurrent miscarriage
- Congenital abnormality (neural tube defects, hydrocephaly, cardiovascular, orofacial, and limb reduction anomalies)
- Dizygotic twins
- Increased incident of urinary tract infections
- Gestational diabetes and Type 2 diabetes
- Hypertension / pre eclampsia
- Cardiac dysfunction
- Sleep apnoea
- Fatty liver disease
- Pre term labour
- Postmaturity
- Prolonged / dysfunctional labour
- Thromboembolism
- Need for induction of labour
- Difficulty monitoring the fetus during the ante and intrapartum period
- Caesarean / instrumental vaginal birth
- Shoulder dystocia
- Post partum haemorrhage
- Postpartum endometritis
- Post caesarean section wound infection or wound dehiscence
- Prolonged postnatal hospital stay
- Intrauterine death / still birth
- Increased incidence of perineal trauma
- Increased incidence of genital and urinary tract infection
- Reduced breast feeding rate, failure to establish lactation
- VBAC less successful (Failure rate of 30% in obese women and 39% in morbidly obese compared to 15% in women of normal weight)—Up To Date
- Postpartum depression
**Neonatal**
- Early neonatal death
- NICU admissions
- Increased birth weight / macrosomia (large for gestational age)
- Impaired or restricted growth (small for gestational age)
- Neural tube defects
- Hypoglycaemia
- Meconium aspiration
- Child adiposity and diabetes (obesity rate is doubled in children of obese mothers)
- Childhood asthma
- Autism spectrum disorders, developmental delay, attention-deficit/hyperactivity disorder

**GUIDELINE:**

**Antenatal Care Pathway**

Women with a BMI ≥ 40 who present for booking should:
- Be referred to the Obstetrician at booking. In some instances, care at the secondary hospital up to and including birth may be appropriate
- If the HBA1c at booking is greater than 40 mmol/mol then the woman should be referred to the obstetrician/diabetes in pregnancy team asap. If the HBA1c at booking is normal then an early GTT would be recommended. If this is normal at this stage it is recommended that it should be repeated around 26-28 weeks gestation
- Be weighed at each appointment and advised of the suggested weight gain limits. Encourage adequate weight gain as well. Weight gain of less than 5 kgs has been associated with SGA.

<table>
<thead>
<tr>
<th>Category</th>
<th>BMI</th>
<th>Suggested weight gain (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>&lt;18.5</td>
<td>12.5 - 18</td>
</tr>
<tr>
<td>Normal weight</td>
<td>18.5 to 24.9</td>
<td>11.5 to 16</td>
</tr>
<tr>
<td>Overweight</td>
<td>25.0 to 29.9</td>
<td>7 to 11.5</td>
</tr>
<tr>
<td>Obese Class I</td>
<td>30.0 to 34.9</td>
<td>7</td>
</tr>
<tr>
<td>Obese Class II</td>
<td>35.0 to 39.9</td>
<td>7</td>
</tr>
<tr>
<td>Obese Class III</td>
<td>≥40</td>
<td>7</td>
</tr>
</tbody>
</table>

- Have an open discussion on obesity including the associated problems/risks to both the woman and the baby
- Be advised on the benefits of moderate exercise and healthy eating and referred to a dietician
- Be advised to take 5 mg/day folate supplement and 150 mcg iodine. Consider testing for Vitamin D deficiency as obese women are at greater risk of Vitamin D deficiency and cord serum Vitamin D levels in babies of obese women have been found to be lower. Supplement with Vitamin D if found to be deficient
- Be referred for an anaesthetic consultation by the obstetrician
- Be advised that repeat scans for foetal weight and liquor volume in the third trimester (28-32-36 weeks) may be helpful to assess foetal growth. Doppler studies are recommended if infant measuring <10%ile as per IUGR guidelines. All scan request forms should have the woman’s BMI clearly documented so the sonographer can prepare as more time may need
to be allocated to the appointment. Counsel about the limitations of ultrasound in accurately assessing weight and in identifying structural anomalies

♦ Have a schedule of antenatal care to reflect the risk
♦ Be advised against/discouraged from having a homebirth. Birth in an obstetric unit with appropriate neonatal services is recommended
♦ Women with a BMI ≥35 with additional risk factors for hypertension or other significant medical history should have an obstetric referral and consultation
♦ Recommend screening in antenatal clinic for sleep apnoea with the Epworth Sleepiness Scale and referring to Michelle Scott, RN, in Sleep Apnoea Clinic in Tui Te Ora for sleep apnoea concerns
♦ Vaccinations should be checked and up to date as per standard, in particular for influenza

Labour and Birth

♦ The obstetric team should be informed when a woman with a BMI ≥40 arrives in labour. This may not be necessary if a plan of care is pre-determined
♦ If the woman weighs >120kg, theatre need to be made aware of her admission so they can obtain the appropriate equipment if a CS is required
♦ Consider use of the hover mat
♦ Consider the use of a scan on admission in labour (or prior to induction) to confirm presentation, particularly if there is any uncertainty.
♦ Have a low threshold for the use of the fetal scalp electrode (FSE) as abdominal monitoring is likely to be technically more difficult and less reliable
♦ Ensure that the correct large sized blood pressure cuff is available and used
♦ Be aware of the risk of difficult fetal monitoring, shoulder dystocia, difficult spinal/epidural, difficult intubation and difficulty during caesarean and post partum haemorrhage
♦ Ensure there is IV access with a large gauge cannula when labour establishes
♦ Assess pressure areas and maintain skin integrity
♦ Assess if manual handling equipment is available and will be used, contact Duty Manager if equipment required
♦ Adequate analgesia should be provided; try to encourage the woman to be active in labour but if a regional analgesia is the preferred choice of pain relief, the epidural catheter should be sited early
♦ Median duration of first stage can be longer in overweight and obese women. Consider allowing a longer first stage of labour before performing a caesarean delivery for labour arrest. Second stage should be no different
♦ Active management of the third stage of labour is recommended

Caesarean Birth

♦ The BMI should be noted on the booking form of women booked for elective caesarean so that theatre and anaesthetic staff are alerted
♦ Measure for flowtron stockings and take a pair and a pump to theatre with woman for attachment during caesarean
♦ Theatre staff should be given as much notice as possible in order for them to prepare appropriate equipment if the woman weighs >120kg
♦ Consider use of the hover mat to transfer from bed to theatre table and back
Catheterisation should be performed prior to insertion of the epidural block and transfer to theatre as the woman will be able to assist in correct positioning for the procedure to take place.

Consider higher preoperative antibiotic dose, such as 3 g of cefazolin for patients who weigh more than 120 kg.

Avoid the use of subcutaneous drains as they are associated with increased risk of postpartum wound complications.

Suturing of the subcutaneous tissue space should be considered in order to reduce the risk of wound infection and wound separation.

Counselling about the risks of further caesarean sections for women with two or more caesarean sections should be undertaken either in the antenatal clinic or prior to discharge. The information should include the risks of operative procedures in obese women as well as the risk of placenta praevia/accrete.

**Postnatal**

- Early mobilisation
- Adequate analgesia should be provided
- Complete a VTE Risk Assessment and document prophylaxis in the woman’s MCIS record
- Document VTE risk on the National Medication Chart
- Venous thromboembolism (VTE) prophylaxis should be given to all obese women after a caesarean birth, and a vaginal birth if there are any other risk factors for VTE. Use weight-based (0.5 mg/kg enoxaparin every 12 hours) dosage or BMI-stratified (BMI of 40-59 receive 40 mg every 12 hours and BMI of 60 or greater receive 60 mg every 12 hours) dosage
- Ensure vigilance regarding signs for secondary postpartum haemorrhage
- Provide advice on the signs of deep vein thrombosis and pulmonary embolism
- Monitor for surgical site infection and treat as indicated
- Consider the woman may require additional assistance with breastfeeding from a lactation consultant
- Provide advise on lifestyle modifications. Again consider referral to dietician
- Provide advise on the benefits of weight loss before any further pregnancy, if planned
- Discuss contraception

**ASSOCIATED DOCUMENTS:**
Maternity – Antenatal blood glucose monitoring
Maternity - Anaesthetic consultation in pregnancy guideline
Maternity - Preparation and care of women undergoing caesarean section, including trial of instrumental delivery in theatre
Maternity – Postnatal care of caesarean mother and baby
REFERENCES:


MOH (2011) Guidelines for Consultation with Obstetric and Related Medical Services (Referral Guidelines) Wellington: MOH

RANZCOG College Statement: Management of Obesity in Pregnancy. September 2013

System Pharmacists; Infectious Disease Society of America; Surgical Infection Society; Society for Healthcare Epidemiology of America. Am J Health Syst Pharm 2013;70:195-283


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