Obesity in Pregnancy and Pre-pregnancy

Disclaimer

This pathway is for patients with a BMI > 30 who may be planning a pregnancy within the next 2 years or who are presenting with a current pregnancy.

See also:

- Preconception Assessment
- Antenatal Care - First Consult

Contents

Background – About Obesity in Pregnancy and Pre-pregnancy

- Obesity during pregnancy is defined as a Body Mass Index (BMI) of ≥ 30 kg/m^2 at the first antenatal consultation.
- Approximately 50% of pregnant women are either overweight or obese.
- Obesity has adverse effects on fertility and is associated with multiple fetal and maternal adverse outcomes.

Assessment

1. Preconception:
   - Assess the patient's weight history, including anti-obesity medication (contraindicated in pregnancy) and weight reduction surgery. See also Management of Overweight and Obesity in Adults.
   - Assess ***BMI,*** but be aware that it is not a perfect measure as it does not take into account age or ethnicity.

     BMI for adults

     Body mass index = kg/m^2 (weight divided by height squared)

     Use your clinical software or the Heart Foundation's online BMI calculator.
     - *< 18.5 = underweight*
     - *Between 18.5 and 24.9 = healthy or normal weight*
     - *Between 25 and 29.9 = overweight*
     - *≥ 30 = obese*

     For patients aged < 20 years, calculate BMI using the Child and Teen BMI Calculator.

   - Identify ***cardiovascular risk factors*** and ***obesity associated complications.***

     Obesity associated complications
     - *Hypertension*
     - *Coronary heart disease*
     - *Diabetes*
     - *Osteoarthritis*
     - *Sleep apnoea*
     - *Stroke*
     - *Non-alcoholic steatohepatitis (NASH)*
     - *Gastro-oesophageal reflux disease (GORD)*
     - *Menstrual irregularities, infertility, polycystic ovarian syndrome (PCOS)*
     - *Chronic kidney disease (CKD)*

     Cardiovascular risk factors
     - *Absolute cardiovascular disease risk*
     - *Smoking*

   - Screen for diabetes and hyperlipidaemia.

2. Pregnancy:
   - If not already measured, assess ***BMI*** as early as possible in pregnancy.

     BMI in pregnancy
     Ideally a BMI should be calculated using a pre-pregnancy weight. If unknown, use the weight at the first antenatal consultation (ideally before 12 weeks gestation).

   - If BMI > 35, arrange ***investigations.***

     Investigations
     - *Early oral glucose tolerance test (OGTT) – around 12 to 16 weeks*
     - *Folate, B12, calcium, vitamin D levels (if history of bariatric surgery)*
     - *Consider baseline renal and liver function tests to assist in diagnosis of complications later in pregnancy:*
       - *Urine protein:creatinine ratio*
       - *electrolytes, urea, and creatinine*
       - *LFTs*

   - See also Antenatal Care - First Consult.

Management

Practice Point

Avoid weight management medications or surgery

Medications or surgery for weight management are not recommended around the time of conception or during pregnancy because of insufficient safety data.

Pre-pregnancy

1. If BMI ≥ 30:
   - encourage weight loss.
   - consider requesting a dietitian assessment.
   - inform the patient of the ***additional risks*** of obesity in pregnancy.

     Additional risks
     - *Maternal*:
       - *Anaesthetic difficulties in labour (analgesia, maintaining an airway)*
       - *Caesarean section*
       - *Cholecystitis*
       - *Depression*
       - *Diabetes (gestational and type II)*
       - *Difficulties with breastfeeding*
       - *Failed induction of labour, prolonged labour and failure to progress*
       - *Failed attempts at vaginal birth after caesarean section*
       - *Gestational hypertension*
       - *Increased risk of multiple gestation*

- *Infection (chest, genital tract, urinary tract infection, wound)*
- *Maternal mortality*
- *Miscarriage*
- *Obstructed labour*
- *Obstructive sleep apnoea*
- *Operative and complicated vaginal birth*
- *Postpartum haemorrhage*
- *Pre-eclampsia*
- *Preterm birth*
- *Reduced breastfeeding*
- *Surgical site infections*
- *Thromboembolic disease*
- *Increased need for postpartum ICU/HDU admission*
- *Induction of labour for prolonged pregnancy*

- *Fetal/Neonatal*
  - *Abnormalities in fetal growth*
  - *Admission to neonatal intensive care units*
  - *Congenital malformations including neural tube defects, congenital heart disease, omphalocele, cleft lip and palate*
  - *Difficulties with fetal heart rate monitoring*
  - *Increased risk of failure of non-invasive prenatal testing (NIPT)*
  - *Long term neonatal consequences: neonatal body composition, infant weight gain, obesity*
  - *Low Apgar score*
  - *Macrosomia*
  - *Shoulder dystocia*
  - *Stillbirth*
  - *Suboptimal ultrasonography – increased risk of undetected fetal structural abnormality*

2. Encourage obese women (BMI > 30) planning a pregnancy to take 150 micrograms iodine and high dose folate (5 mg), due to the increased risk of neural tube defects.

3. Provide diet and exercise recommendations.

4. Advise women to stop taking prescription and over-the-counter weight loss medications and complementary alternative medications.

5. If patient has had bariatric surgery:
   - Avoid pregnancy immediately post-surgery and during initial weight loss phase (usually 12 to 24 months).
   - Check levels and consider additional supplementation with vitamin B12, iron, folate, vitamin D and calcium.

Pregnancy

1. Arrange pregnancy booking early in pregnancy:
   - Note increased BMI on booking form.
   - Check local service capability prior to referral as some services have BMI limits and will not accept higher risk referrals.

- Refer women with a body mass index (BMI) > 60 on booking to a level 6 public hospital maternity service as per Statewide Referral Criteria.

2. If BMI > 30, counsel patient sensitively about the ***additional risks*** of obesity in pregnancy.

3. Consider a dietitian assessment.

4. Discuss:
   - ***nutritional support.***

     - *High dose folate (5 mg) is recommended for women with a BMI > 30 pre-pregnancy and during the first trimester, due to the increased risk of neural tube defects.*
     - *The NHMRC recommend that all women who are pregnant, breastfeeding, or considering pregnancy take 150 micrograms of iodine daily.*
     - *Consider iron, B12, calcium and vitamin D.*

   - ***gestational weight gain goal ranges.***

Pre-pregnancy BMI	***Rate of gain 2nd and 3rd trimester (kg/week)***	***Recommended total gain range (kg)***
< 18.5	*0.45*	*12.5 to 18*
18.5 to 24.9	*0.45*	*11.5 to 16*
25 to 29	*0.28*	*6.8 to 11.3*
≥ 30	*0.22*	*5 to 9.1*

Source: Victorian Maternity eHandbook: Obesity

   - ***weight management during pregnancy.***

     - *Explain that limiting weight gain can reduce the risk of adverse outcomes.*
     - *Dietary intake should not be restricted below the recommended food group requirements in pregnancy*
     - *If weight gain is above expected, aim to slow rate of gain, not to lose weight.*
     - *See Australian Government: Australian Dietary Guidelines – Healthy Eating During Your Pregnancy.*
     - *Consider providing weekly monitoring chart: How to Monitor Your Weight Gain During Pregnancy: BMI 30 and Above (27.5 and Above If Asian)*

   - ***exercise in pregnancy*** recommendations.

     Exercise in pregnancy
     - *Effective exercise can reduce the incidence of gestational diabetes and weight gain in pregnancy.*
     - *In the absence of complications, advise patients to undertake 30 to 60 minutes of moderate activity at least 3 to 4 times per week.*
     - *Heart rate should usually not exceed 140 beats per minute.*

- *Safe exercise options include walking, stationary cycling, aerobic exercises, dancing, resistance (e.g., weights), stretching exercises, water aerobics (this list is not exhaustive).*

5. Consider ***aspirin prophylaxis*** if additional ***risk factors for pre-eclampsia*** (e.g. primiparity (first pregnancy), advanced maternal age (AMA), previous pre-eclampsia).

Risk factors for pre-eclampsia

- *High risk:*
  - *History of pre-eclampsia*
  - *Systemic lupus erythematosus or antiphospholipid syndrome*
  - *Chronic kidney disease*
  - *Hypertension*
  - *Type 1 or type 2 diabetes*
- *Moderate risk if > 1 of:*
  - *Aged ≥ 40 years*
  - *BMI of ≥ 35 at first visit*
  - *Family history of pre-eclampsia in first-degree relative*
  - *First pregnancy*
  - *Multiple pregnancy*
  - *> 10 years since previous pregnancy*

Some specialist obstetric imaging groups and genetic services offer screening for early onset pre-eclampsia, a condition that effects 0.3% of women and requires delivery before 34 weeks. This can be performed at the same time as combined first trimester screening and is estimated to detect up to 8 out of 10 pregnancies at risk of early pre-eclampsia. Women with a positive result require increased monitoring during pregnancy.

Aspirin prophylaxis

- *Commence low dose aspirin 150 mg at night from 12 weeks and before 16 weeks of pregnancy, unless contraindicated (e.g., allergy, active peptic ulcer disease, or gastrointestinal bleeding).*
- *Aspirin should be ceased at 36 weeks.*
- *Recommend adequate dietary calcium intake. Calcium supplement can be considered if dietary calcium does not meet RDI of 1000 mg per day.*

6. Advise patient that there may be a need in the second and third trimesters, as determined by the obstetrician to:

   - increase the frequency of visits.
   - repeat 75 g oral glucose tolerance test (OGTT) at 26 to 28 weeks if previous testing was negative.
   - from 20 weeks, arrange a urine dipstick test for proteinuria at each visit.
   - arrange extra ultrasounds to monitor for intrauterine growth restriction.
   - arrange for an anaesthetic consult.

After birth

- Low-molecular-weight heparin (LMWH) may be continued by the hospital if operative birth or mobility is compromised by BMI and thromboembolic disorders (TEDS).
- Consider a dietitian assessment.

- If patient has or had gestational diabetes mellitus (GDM), arrange oral glucose tolerance test (OGTT) after 6 weeks.

Referral

- If BMI ≥ 30:
  - consider a dietitian assessment.
  - refer early for pregnancy booking.
  - check service capability prior to referral.
- If BMI > 60, refer to a level 6 public hospital maternity service as per Statewide Referral Criteria.

Information

For health professionals

Further information

Better Safer Care – Maternity ehandbook: Obesity During Pregnancy, Birth and Postpartum

For patients

- Australian Government – Australian Dietary Guidelines: Healthy Eating During Your Pregnancy
- Better Health Channel – Pregnancy and Exercise
- The Royal Women's Hospital:
  - A-Z Fact Sheets
  - Exercise During Pregnancy
  - How to Monitor Your Weight Gain: BMI 30 and Above (27.5 and Above if Asian)

References

1. Berghella V, Saccone G. Exercise in pregnancy! Am. J. Obstet. Gynecol. 2017 Apr 01;216(4):335-337.

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Disclaimer

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