Obesity in Pregnancy: Outpatient Management

**Goal:** “Every encounter should provide safety, privacy, and dignity.”

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**Table 2. Increases In Congenital Anomalies in Obese Versus Nonobese Gravidae**

<table>
<thead>
<tr>
<th>Congenital Anomaly</th>
<th>Increased Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neural tube defects</td>
<td>OR, 1.87; 95% CI, 1.62-2.15</td>
</tr>
<tr>
<td>Spina bifida</td>
<td>OR, 2.24; 95% CI, 1.86-2.69</td>
</tr>
<tr>
<td>Cardiovascular anomalies</td>
<td>OR, 1.30; 95% CI, 1.12-1.51</td>
</tr>
<tr>
<td>Septal anomalies</td>
<td>OR, 1.20; 95% CI, 1.09-1.31</td>
</tr>
<tr>
<td>Cleft palate</td>
<td>OR, 1.23; 95% CI, 1.03-1.47</td>
</tr>
<tr>
<td>Cleft lip and palate</td>
<td>OR, 1.20; 95% CI, 1.03-1.40</td>
</tr>
<tr>
<td>Anorectal atresia</td>
<td>OR, 1.48; 95% CI, 1.12-1.97</td>
</tr>
<tr>
<td>Hydrocephaly</td>
<td>OR, 1.68; 95% CI, 1.19-2.36</td>
</tr>
<tr>
<td>Limb reduction anomalies</td>
<td>OR, 1.34; 95% CI, 1.03-1.73</td>
</tr>
</tbody>
</table>

Abbreviations: CI, confidence interval; OR, odds ratio


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**Table 3. Absolute Risks Per 10,000 Pregnancies for Body Mass Index Categories 20, 25, and 30**

<table>
<thead>
<tr>
<th>Maternal BMI</th>
<th>20</th>
<th>25</th>
<th>30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fetal death</td>
<td>76 (95% CI, 76-88)</td>
<td>102 (95% CI, 93-112)</td>
<td></td>
</tr>
<tr>
<td>Stillbirth</td>
<td>40 (95% CI, 46-51)</td>
<td>59 (95% CI, 55-63)</td>
<td></td>
</tr>
<tr>
<td>Perinatal death</td>
<td>66 (95% CI, 67-81)</td>
<td>86 (95% CI, 76-98)</td>
<td></td>
</tr>
<tr>
<td>Neonatal death</td>
<td>20 (95% CI, 19-23)</td>
<td>24 (95% CI, 22-27)</td>
<td></td>
</tr>
<tr>
<td>Infant death</td>
<td>33 (95% CI, 34-39)</td>
<td>43 (95% CI, 40-47)</td>
<td></td>
</tr>
</tbody>
</table>

Abbreviations: BMI, body mass index; CI, confidence interval.

Data from Aune D, Saugstad OD, Henriksen T, Tonstad S. Maternal body mass index and the risk of fetal death, stillbirth, and infant death: a systematic review and meta-analysis. JAMA 2014;311:1536-46.

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**Preconception**

[] Obtain weight, height, and calculate pre-pregnancy BMI for accurate counseling.

[] Review medications and counsel on pregnancy considerations (i.e., weight loss medications or oral antihyperglycemic agents).

[] Counsel patient on obesity-related pregnancy risks including increased risk of congenital anomalies and adverse perinatal outcomes.

[] Screen for additional pre-pregnancy cardiometabolic risk factors (HTN, dyslipidemia, elevated triglycerides, impaired glucose metabolism or diabetes mellitus, obstructive sleep apnea, tobacco use) and counsel as appropriate.

[] Screen for obstructive sleep apnea and refer to sleep medicine as indicated.

[] Referral to obesity medicine or bariatric surgery* if patient desires -any weight loss prior to pregnancy will help to decrease risk of adverse outcomes.

[] Begin a prenatal vitamin and 1-4mg of folic acid daily prior to conception.

*Candidates for bariatric surgery include adolescents and adults with a BMI ≥40 kg/m², or a BMI of 35 to 39.9 kg/m² with at least one serious comorbidity, who have not met weight loss goals with diet, exercise, and drug therapy.
## Obesity in Pregnancy: Outpatient Management

### First Trimester

- Baseline HELLP labs and urine protein/creatinine ratio
- 1hr GTT
- Baseline TSH
- Screen for additional cardiometabolic risk factors (HTN, impaired glucose metabolism or diabetes mellitus, obstructive sleep apnea, tobacco use)
- Screen for OSA > refer to sleep medicine as indicated
- Consider Baseline EKG BMI ≥40kg/m²
- Echocardiogram if abnormal EKG, chronic hypertension, or signs/symptoms of suspected cardiac etiology (chest pain, SOB, palpitations, etc...)
- Nutrition consultation
- Review total weight gain goal 11-20lbs in pregnancy - approximately .51bs (.4-.6) per week in 2nd and 3rd trimesters
- Offer aneuploidy screening, discuss limitations of NIPT for patients with obesity
- Consider collecting a maternal serum AFP in conjunction with US for screening of neural tube defects

### Second + Third Trimester

- Targeted US (BMI >35kg/m²) - patient should be counseled on limitations of US in identifying structural anomalies
- Third trimester growth ultrasound for BMI ≥35-39kg/m²
- Monthly growth ultrasound for BMI ≥40kg/m² or if cannot accurately measure fundal height
- NST weekly for BMI ≥40kg/m² starting 34w0d-34w6d weeks
- Anesthesia consult for any of the following:
  1. Cannot walk 2 blocks without stopping or cannot do light housework without stopping
  2. Cannot lie flat.
  3. Currently on anticoagulants or will be on anticoagulants
- Contraception counseling
- BMI ≥40kg/m² Delivery by EDD in the absence of other obstetric indications

### Postpartum:

- Breastfeeding support
- Consider lovenox x6 weeks for BMI >50* after cesarean delivery
  - BMI 40-59.9kg/m²: 40mg q12hr
  - BMI ≥60kg/m²: 60mg q12hr
- Transition care to PCP and obesity medicine
Obesity in Pregnancy: Management Inpatient

Labor and Delivery Unit Readiness:
- Huddle with OB attending, charge RN, and anesthesia to determine best unit for patient's care
- Confirm bariatric bed availability in labor and in OR

On Admission
- Notify anesthesia team
- 2 IVs
- Perform postpartum hemorrhage risk assessment
- SCDs

Intrapartum:
- Considerations for intrauterine fetal and tocometry monitoring
- Review patient positioning and staff needs for intrauterine resuscitation, pushing, and possible shoulder dystocia

If cesarean delivery:
- Assessment of optimal skin incision preoperatively - paraumbilical may improve visualization and decrease risk of surgical site infection
- Antibiotic prophylaxis:
  - 2gm cefazolin for >80kg
  - 3gm cefazolin for >120kg

Postpartum Unit:
- VTE prophylaxis
- Lactation support
Sources:


Created 11/2021- JJ
These algorithms are designed to assist the primary care provider in the clinical management of a variety of problems that occur during pregnancy. They should not be interpreted as a standard of care, but instead represent guidelines for management. Variation in practices should take into account such factors as characteristics of the individual patient, health resources, and regional experience with diagnostic and therapeutic modalities. The algorithms remain the intellectual property of the University of North Carolina at Chapel Hill School of Medicine. They cannot be reproduced in whole or in part without the expressed written permission of the school. www.mombaby.org