

Management of Severe Obesity in Pregnancy

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Obesity continues to be a major public health problem, affecting about one-third of reproductive-age women.

SL is a 29-year-old woman with a height of 5'3" and weight of 275 lb, who visits her primary medical doctor for an annual exam. She mentions that she is trying to conceive. Her doctor calculates her body mass index (BMI) at 48 kg/m², putting her into the severely obese (class 3) category. She is otherwise healthy. Her doctor advises weight loss and suggests she consider bariatric surgery, prior to conception, in order to reduce her risk of pregnancy complications.

Women's health providers are increasingly managing severe obesity and its associated pregnancy complications in their practices. This article discusses the diagnosis of obesity, implications of obesity on maternal and fetal health, preconception, prenatal and delivery considerations for obese women, and management of pregnancy following bariatric surgery.

DIAGNOSING OBESITY

How do you diagnose obesity, and what is the scope of the problem among pregnant women? BMI is a common and simple method for diagnosing obesity, calculated as weight in kilograms divided by height in meters squared. (For a useful online BMI

calculator, see www.nhlbisupport.com/bmi.) Severity of obesity is defined as class 1 (BMI, 30-<35), class 2 (BMI 35-<40), and class 3 (BMI ≥40).¹ During 2007 and 2008, 34% of all reproductive-age women in the United States were obese (BMI ≥30), 19% had class 2 obesity, and 8% had class 3 obesity. In addition, since 1980 the distribution of BMI in the population has shifted to the right, indicating that overall, people are becoming heavier and meeting the criteria for the highest BMI categories.¹

PERINATAL RISKS

What are the perinatal risks associated with obesity? Obesity is a risk factor for pregnancy complications including gestational diabetes mellitus, hypertension in pregnancy, fetal macrosomia, and congenital anomalies.² Risk for cesarean delivery increases with BMI and is almost 3 times higher for women with class 2 obesity compared with women with a normal BMI. Higher BMI is associated with increased risk for wound infection and breakdown.² In addition, obesity in pregnancy is associated with increased utilization of health care services.³

PRECONCEPTION CONSIDERATIONS

What are preconception care considerations for severely obese women? Preconception counseling is aimed at achieving a healthier weight prior to conception, with a goal of normalizing BMI. Because obese women are at increased risk for complications, all primary care visits with women of reproductive age present an opportunity to optimize preconception health (Table 1). ACOG recommends counseling all overweight and

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TABLE 1. Considerations for the Management of Severe Obesity in Pregnancy

Preconception care	<p>Calculate prepregnancy BMI and perform risk stratification, including glucose testing and blood pressure reading.</p> <p>Consider thyroid testing.</p> <p>Consider screening for vitamin D deficiency.</p> <p>Provide information regarding the maternal and fetal risks of obesity in pregnancy.</p> <p>Refer for weight loss program and consider bariatric surgery if the patient is a candidate. Suggest waiting at least one year after bariatric surgery before conceiving.</p> <p>Offer contraception counseling to prevent pregnancy prior to medical optimization.</p>
Prenatal care	<p>Calculate BMI at first visit, and monitor gestational weight gain.</p> <p>Counsel regarding suggested weight gain during pregnancy; refer for nutrition counseling.</p> <p>Consider screening for gestational diabetes in the first trimester and repeat screening later in pregnancy if negative.</p> <p>If post–bariatric surgery, screen for vitamin deficiencies, treat, and start on maintenance vitamins if not already taking.</p>
Intrapartum care	<p>Anesthesiology consultation.</p> <p>Consider primary cesarean delivery for standard maternal and fetal recommendations including EFW >5,000 g or >4,500 g with diabetes.</p> <p>Consider VTE disease prophylaxis post cesarean delivery: early ambulation, graduated compression stockings, possibly heparin therapy.</p>
Postpartum care	<p>Continue nutrition counseling and exercise program.</p> <p>Postpartum screening for diabetes for patients with a history of gestational diabetes.</p> <p>Refer for continued primary care to promote further weight loss and chronic disease risk stratification and reduction strategies.</p> <p>Offer contraception such as long-acting reversible method.</p>

Abbreviations: BMI, body mass index; EFW, estimated fetal weight; VTE, venous thromboembolism.

obese women about potential pregnancy complications, including fetal risks.² Clinicians should also screen for medical complications, such as type 2 diabetes or hypertension. Preconception visits provide a chance to recommend weight loss, including referral to a nutritionist, structured weight management program, or a bariatric surgeon. Finally, obese women who are not yet medically optimized should receive reliable contraception.

Does weight loss prior to pregnancy reduce complications? Weight loss studies in the general population show that adherence to strict diets and exercise can help people decrease weight, but maintaining weight loss over time is difficult.⁴ To our knowledge, no trials have addressed prepregnancy weight loss interventions and preg-

nancy outcomes for obese women.

Bariatric surgery is an effective therapy for obesity, resulting in significant weight loss and improvement in many comorbidities.⁵ Women accounted for 83% of all bariatric surgery procedures in the 18 to 45 age-group between 1998 and 2005.⁶ While there is evidence that bariatric surgery reduces the risk of perinatal complications, most studies have been small, short-term, and without detailed information about fetal outcomes.⁶ To be a surgical candidate, insurance companies require either class 3 obesity, or class 2 obesity with associated comorbid conditions, such as type 2 diabetes.

PRENATAL CARE

What are prenatal care considerations for severely obese women? When first presenting for prenatal care, obese women should

TABLE 2. Institute of Medicine Recommendations for Total Gestational Weight Gain and Rate of Weight Gain During Pregnancy, Stratified by Prepregnancy BMI⁷

Prepregnancy BMI	BMI (kg/m ²)	Total weight gain (lb)	Rates of weight gain 2nd and 3rd trimesters (lb/wk)
Underweight	<18.5	28-40	1 (1.0-1.3)
Normal weight	18.5-24.9	25-35	1 (0.8-1.0)
Overweight	25.0-29.9	15-25	0.6 (0.5-0.7)
Obese (includes all classes)	≥30.0	11-20	0.5 (0.4-0.6)

Adapted from Institute of Medicine. *Weight Gain During Pregnancy: Reexamining the Guidelines*. 2009. Available at: www.iom.edu/pregnancyweightgain.

receive counseling about the potential maternal and fetal risks, as well as expectations for gestational weight gain to reduce these risks. Studies consistently show a relationship between gestational weight gain and neonatal birth weight, including risk for macrosomia. Higher weight gain is also associated with risk for cesarean delivery, but the relationship is confounded by prepregnancy weight.

The Institute of Medicine recently revised its 1990 guidelines, as reported in “Weight Gain During Pregnancy: Reexamining the Guidelines” (Table 2).⁷ For women with a prepregnancy BMI of ≥30, the recommended range of weight gain is 5 to 9 kg (11-20 lb). However, there are no recommendations specifically for women with class 3 obesity, and few studies have prospectively assessed outcomes of limiting weight gain. A few small studies have examined interventions to help women gain pregnancy weight within recommended guidelines, but they have not shown any impact on birth weight, preeclampsia, or pregnancy-induced hypertension.⁷

Although the benefits of an earlier diagnosis of gestational diabetes have not been well established, ACOG suggests screening obese women for the condition earlier in pregnancy. A positive test likely indicates prepregnancy type 2 diabetes that had not yet been diagnosed. If the test is negative,

however, women should undergo the glucose challenge test at the standard time between 25 and 28 weeks.²

Indications for cesarean delivery are the same for obese and nonobese women. Since obese women are at risk for anesthetic complications such as difficulty obtaining neuraxial anesthesia, as well as failed or difficult intubations, an anesthesia consultation could be considered prenatally or early during intrapartum management.²

BARIATRIC SURGERY

What are specific considerations for managing pregnancy after bariatric surgery? Most surgeons recommend waiting 12 to 18 months after surgery before conception, to avoid pregnancy during the period of rapid weight loss. A recent retrospective cohort study by Sheiner et al compared 104 women who conceived within one year of surgery with 385 who conceived after one year and showed no differences in birth weight, anemia, preterm delivery, and other short-term perinatal outcomes.⁸

The most common bariatric surgical procedure in the United States is Roux-en-Y gastric bypass, which has both malabsorptive and restrictive effects and may result in nutritional deficiencies. The study by Sheiner et al included only 4 patients who conceived within one of year surgery and had under-

FOCUSPOINT

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gone gastric bypass surgery, limiting its generalizability. Because of the risk for nutritional deficiencies, prior to or early in pregnancy women should be screened and treated for

vitamin deficiencies, including iron, vitamin D, vitamin B₁₂, folate, and calcium.⁹

Although post-bariatric surgery pregnancy is generally considered safe, rare

Coding for Management of Severe Obesity in Pregnancy

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The management of the obese patient, whether pregnant or not, points out some basic coding concepts that should be a part of every patient's care. I believe you should record each patient's body mass index (BMI), along with 3 vital signs, at each office visit. I would also recommend having a graph of the patient's BMI in her chart that could be shown to the patient who needs encouragement to manage her weight.

If you are counseling a patient prior to conception, you would use the morbid obesity ICD-9 code:

278.01 Morbid obesity, severe obesity

You are instructed in the ICD-9 book to also use an additional code to identify BMI. According to this article, severity of obesity is defined as class 1 (BMI 30-<35):

V85.30 Body Mass Index 30.0-30.9, adult

V85.31 Body Mass Index 31.0-31.9, adult

V85.32 Body Mass Index 32.0-32.9, adult

V85.33 Body Mass Index 33.0-33.9, adult

V85.34 Body Mass Index 34.0-34.9, adult

Class 2 (BMI 35-<40):

V85.35 Body Mass Index 35.0-35.9, adult

V85.36 Body Mass Index 36.0-36.9, adult

V85.37 Body Mass Index 37.0-37.9, adult

V85.38 Body Mass Index 38.0-38.9, adult

V85.39 Body Mass Index 39.0-39.9, adult

Class 3 (BMI >40):

V85.41 Body Mass Index 40.0-44.9, adult

V85.42 Body Mass Index 45.0-49.9, adult

V85.43 Body Mass Index 50.0-59.9, adult

V85.44 Body Mass Index 60.0-69.9, adult

V84.45 Body Mass Index 70 and over, adult

It is important to note that the adult codes are used for persons older than 20; for the severely obese pediatric (age 2-20) patient, the code is:

V85.54 Body Mass Index, pediatric, greater than or equal to 95th percentile for age

When managing the pregnant obese patient, you should code the complication of pregnancy as well as list the appropriate V code indicating the BMI. This further supports your claim for a complicated pregnancy and delivery.

649.1 Obesity complicating pregnancy, childbirth, or the puerperium

(You must add the fifth digit to identify the episode of care)

- 1** delivered, with or without mention of antepartum condition
- 2** delivered, with mention of postpartum complication
- 3** antepartum condition or complication
- 4** postpartum condition or complication

If you consider this to be a complicated and difficult delivery, you should use the -22 modifier after the delivery code. You should increase your fee by whatever percentage you believe to be appropriate, as the payor will not automatically increase your fee. And, remember that documentation is very, very important in these cases.

59510-22 Routine obstetric care including antepartum care, cesarean delivery, and postpartum care

22 Increased Procedural Services: When the work required to provide a service is substantially greater than typically required, it may be identified by adding modifier 22 to the usual procedure code. Documentation must support the substantial additional work and the reason for the additional work (eg, increased intensity, time, technical difficulty of procedure, severity of patient's condition, physical and mental effort required).

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complications including hernias, small bowel ischemia, vomiting, gastrointestinal bleeding, anemia, and intrauterine growth restriction have been reported. In addition, following adjustable gastric banding, some patients may require removal of fluid from the band to relieve gastrointestinal symptoms during pregnancy and facilitate appropriate weight gain.⁹

Dumping syndrome can occur after a malabsorptive gastric bypass procedure; therefore, the standard glucose challenge test should be avoided. Alternatively, the patient can monitor her fasting and postprandial blood sugar for a week between 25 and 28 weeks to screen for gestational diabetes.¹⁰ Cesarean delivery rates are high after bariatric surgery, even after controlling for obesity, but a history of bariatric surgery should not alter the labor and delivery course.²

POSTPARTUM

What are considerations for postpartum care for severely obese women? ACOG recommends screening all women who had gestational diabetes for type 2 diabetes at 6 to 12 weeks postpartum. A fasting plasma glucose or a 75-g oral glucose tolerance test can be used for screening.¹¹ In the postpartum period, weight loss is particularly important, as postpartum weight retention can significantly increase future risk for obesity-related chronic diseases. In addition to its benefits for the baby, breastfeeding may promote postpartum weight loss for women in all prepregnancy BMI categories.¹²

Clinicians may also consider referring a severely obese patient for subsequent follow-up with an internist to promote weight loss efforts and medical management to achieve a healthier weight in the interconception period, as well as to prevent longer-term obesity-associated complications like heart disease and diabetes.

CONCLUSION

Women's health clinicians need the tools to diagnose and optimize the reproductive health of obese women prior to conception, during pregnancy, and postpartum, as obesity increases in the United States. Early diagnosis and management of gestational diabetes may improve neonatal health outcomes. Although bariatric surgery for women who meet criteria may

prevent perinatal complications, women who have bariatric surgery require special care during pregnancy with a targeted assessment of vitamin deficiencies and appropriate replacement. Throughout their reproductive life course, obese women will need tailored counseling about the risks of obesity, benefits of weight reduction and limited gestational weight gain, and effective interventions to improve long-term maternal health, as well as fetal outcomes.

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