Title: **Obesity Considerations in Pregnancy – screening and management**	**Policy**

SCOPE: All women during pregnancy should be screened for obesity/overweight, provided counseling to gain a healthy weight and if obese have care that is specific to the risks incurred by the degree of obesity

PURPOSE:
Obesity is the fastest growing health problem in this country. One in twenty American women are obese. Pregnancy in obese women have particular complications that need to be evaluated and managed properly.

INDICATIONS:
Health Complications of Obesity
Obesity is associated with increased rates of depression, eating disorders, and low self-esteem. There is also an increased mortality risk and twice the rates of cardiovascular related death in obese individuals. Other complications that affect more obese individuals include asthma, sleep apnea, hypertension, carbohydrate intolerance, dyslipidemia, and rates of sudden death. Infertility, heart disease, gallbladder disease, osteoarthritis, and some types of cancers as in endometrial cancer, are also more prevalent in obese women.

Pregnancy Complications of Obesity
Obese women have increased rates of many complications during pregnancy. These include increased rates of spontaneous abortion, gestational hypertension (OR 2.5-3.2), preeclampsia (OR 1.6-3.3), gestational diabetes (OR 1.6-4.0), and cesarean deliveries. Obese women who require a cesarean delivery also have higher rates of various complications including technical difficulties in preforming an emergency cesarean, postpartum and intrapartum hemorrhage, longer operative times, higher rates of wound infection, post delivery endometritis, thromboembolism, anesthesia complications during regional blocks and problems with intubation.

Fetal and Neonatal Complications of Obesity
Rates of stillbirth, congenital anomalies, fetal macrosomia, difficult deliveries, and neonatal death are increased in pregnant obese women. Several reports document that the risk of a fetal demise is 2 to 3 times higher in obese mothers when compared to women of normal body habitus. Also the rates of congenital anomalies including neural tube defects, congenital heart defects, and other abnormalities are increased in obese women. The rate of fetal macrosomia is

1.7 to 1.9 times higher in obese women. This increases the risk of shoulder dystocia, the need for operative delivery, and neonatal trauma. In fact, maternal obesity, diabetes, and macrosomia are the most important risk factors for shoulder dystocia.

DEFINITION OF OBESITY:
Body Mass Index (BMI) is the tool utilized to assess body habitus. BMI is calculated by dividing the weight in kilograms by the height in meters squared. There are also tables of BMI. (*BMI Index in Appendix). During pregnancy there is debate regarding the use of pre-pregnant BMI versus current BMI. We tend to use the latter since it will reflect the weight gain during the pregnancy

PROCEDURES:

1. **For all women during pregnant care:**

    a. Every pregnant woman should be counseled about appropriate weight gain in pregnancy based on pre-pregnancy BMI.
    b. Every visit weight gain should be addressed
    c. Basic nutritional education prior to and during pregnancy is encouraged.
    d. IOM recommended weight gain during pregnancy based on maternal body habitus[i]:
        i. Normal Weight – 25-35 pounds
        ii. Overweight – 15-25 pounds
        iii. Obese – 11-20 pounds
2. **Pregnancy in the setting of Obesity (BMI> 30) – Additional recommendations**
    a. In women with a **history of gastric bypass**, evaluate maternal serum levels of iron, B12, folate and calcium with supplementation as needed.
    b. Early screening for gestational diabetes with A1c followed by routine screening at 24-28 weeks
    c. Dating scan.
    d. Detailed fetal anatomy survey at 20-22 weeks[ii].
    e. Repeat assessment of fetal growth at 32 weeks if unable to adequately assess fundal height[iii].
3. **Pregnancy in the setting of Type 3 obesity (BMI of >40)** – Additional recommendations
    a. Consider starting weekly antenatal testing at 36 weeks based on observational data that suggest an increased risk for IUFD[iv].
    b. Anesthesia Consult on arrival to L&D or if BMI 50+ or there are significant comorbidities or a significant risk for need for operative intervention prior to labor in the pre-op anesthesia clinic.
    c. Baseline 24 hour urine collection for creatinine clearance and proteinuria in the second trimester.
    d. Maternal EKG and Echocardiogram if additional risk factors such as chronic HTN or poorly controlled pre-gestational diabetes[v].
    e. Ultrasound
        i. Consider early ultrasound for dating and to rule out multiple gestation

ii. Consider early assessment of fetal anatomy at 12-16 weeks via transvaginal ultrasound[vi].
iii. Do an anatomy scan at 20 weeks
iv. Continue doing growth scans every 4 weeks since fundal heights not very accurate

f. If a **cesarean section delivery is likely**:

i. Team huddle with Anesthesia, nursing, providers and patient to evaluate resources, challenges posed by the patient's weight and situation so a care plan can be developed.
ii. Remember that in the best of circumstances a "Crash" section will take up to 45 minutes depending on maternal size
iii. Verify ability to transport patient to OR and that OR table and equipment are adequate for the patient's size and weight
iv. Operating room should be able to accommodate extra personal
v. Antibiotic prophylaxis: increase dosing given based on increased maternal weight by either giving a larger initial dose or repeating the standard dose in 4 hours. (Literature is not clear which is preferred)
vi. Suture closure of the subcutaneous layer is recommended if the subcutaneous layer exceeds 2 cm in depth.
vii. In the setting of super-morbid obesity (BMI 50+ especially with co-morbidities consider use of incisional or wound vacuum
viii. Proper hydration
ix. Compression stockings[vii] (SCD's) with addition of pharmacologic prophylaxis in the setting of a c-section or operative delivery
x. Early ambulation.
xi. Be prepared for immediate and delayed postpartum hemorrhage

APPROVAL

Prepared by: Division of MFM

Approved by: Exec.

Approval: Eve Espey, MD 06/16/2016
Chair, Department of Obstetrics & Gynecology Date

SOP # / Version #	Effective Date	Supersedes	Review Date	Summary of Change(s)

[i] ACOG Committee Opinion 548 – Weight Gain During Pregnancy.
[ii] Executive Summare of Joint Eunice Kennedy Shriver National Institute of Child Health and Human development – ObGyn 2014.
[iii] Executive Summare of Joint Eunice Kennedy Shriver National Institute of Child Health and Human development – ObGyn 2014.
[iv] Berghella.
[v] Berghella.
[vi] Executive Summare of Joint Eunice Kennedy Shriver National Institute of Child Health and Human development – ObGyn 2014.
[vii] If additional risk factors consider pharmacologic thromboprophylaxis - per ACOG Committee Opinion 549 – Obesity in Pregnancy.